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China Report

AGRICULTURE

No. 123

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CHINA REPORT

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I. GENERAL INFORMATION

NEW RESPONSIBILITY SYSTEM SEEN AS STRENGTHENING COLLECTIVE ECONOMY

Shijiazhuang HEBEI RIBAO in Chinese 5 Jan 81 p2

[Article by Wang Feng [3769 7364]: "Unify the Superiority of the Collectives and the Commune Members' Enthusiasm: An Inquiry into the Speciality Contract, Joint Production Planned Compensation Responsibility System"]

[Text] The speciality contract, joint production planned compensation responsibility system produced obvious economic results as soon as it appeared in the Hebei countryside. It was welcomed by the cadres and the masses and currently is the most prevalent responsibility system in use. The features of this responsibility system are as follows: The production brigade implements speciality division of labor according to the commune members' strength and ability and calculates compensation according to the actual economic results of labor. This system gives full scope to the superiority of the collective economy, motivates the people's enthusiasm and has great vitality. One matter with which the broad rural commune members are greatly concerned is how to give even greater scope to the superiority of this responsibility system and how to advance in perfecting it through practice.

(1)

The superiority of the collective economy is a firm fixture of the collective economy itself. This is mainly expressed in the several aspects mentioned below: The unified allocation of the labor force permits implementation of speciality division of labor according to the commune members' strength and abilities so that people can work to the limit of their ability. Unified control over the means of production will prevent having the livestock and farm implements remain idle for over half the year, as is the case in individual farming, thus making full use of them. Unified arrangement of the planting plan allows the suiting of measures to local conditions and permits planting of all types of crops, thus providing full benefits. Implementing division of labor according to the economic results of commune member labor is helpful in giving the commune members a sense of being masters of their lives. Giving full scope to these superiroities results in labor production which is higher than that of individual farming and higher than that even of capitalist agriculture. However, giving full scope to the superiorities of the collective economy requires certain conditions and especially requires giving full scope to the commune members' enthusiasm for labor. Because of the influence of the leftist line mistakes were made in our work, and because of the great destruction caused by Lin Biao and the "gang of four" the organizational style, labor management style and planned labor compensation method of the collective economy had many areas in which they were not matched with the level of development in the production forces. Consequently, the superiority of the collective economy was unable to achieve its full scope. In some areas and units farm production remained at the pre-cooperative level or even at the level of the early Liberation period. In areas with relatively rapid farm development the question of how to give full scope to the superiorities of the collective economy still has urgent problems requiring quick solutions. For example, those peasants engaged in handicraft industries and small business such as stove-building, pig castrating, knife and scissor sharpening and peddling throughout the countryside and those who ran restaurants before the cooperatives were placed in cooperatives without any attempt being made to preserve the relationship between their special skills and the collective economy. Consequently, they could not carry out their customary activities, which decreased the income of both the collective and these people and also brought inconvenience to the masses. When the labor organizations overemphasized mass projects the peasants were unable to perform farm work that required special attention and there was a great waste of the labor force. The method of planned labor compensation also was influenced by the leftist line and was not a suitable method for calculating compensation according to actual economic results, so that people worked without exerting themselves and performed tasks without regard for quality. All of these problems must be quickly solved by the broad cadres and they must make brave investigations. For example, let handicraft workers and peddlars work by contract or contribute to the accumulation fund and public welfare fund according to their income; have an individual responsibility system for farm management; and relatively permanent jobs according to the commune members' speciality and physical strength. Such investigations are the bare beginnings of speciality contracts and a joint production planned compensation responsibility system. Although the influence of the leftist line placed these new attempts at economic work in the unfavorable position of being illegal, nonetheless the masses were able to do them on the sly. However, when problems occuredthey could not get upper level solutions, thus making their efforts less than perfect. Despite this, because they united the superiority of the collective economy with the commune members' enthusiasm this had enormous vitality and consistently made healthy developments. In these two years we have deeply carried out the line, direction and policies of the Third Plenum of the Communist Party in criticizing the anti-revolutionary crimes of Lin Biao and the "gang of four." The cadres and the masses have received the protection and support of all leadership levels in these attempts and have developed the current speciality contract, joint production planned compensation responsibility system.

There are some people who believe that the speciality contract and joint production planned compensation responsibility system is suitable only for brigades with relatively high managment levels and relatively developed diversified management and so they do not actively promote it in the buildingof the agricultural production responsibility system. This is a misunderstanding, because this type of responsibility system was produced through a joint attempt by the broad cadres and masses to merge the superiority of the collective economy with the commune members' enthusiasm, so it has a relatively broad application. Brigades with a properly operating collective economy can use it, as can brigades witha poorly operating collective economy. Brigades with relatively large-scale production can use it as can brigades with single product production or with relatively small-scale production. This system is also very flexible because a team can make a contract and an individual commune member can make a contract. The proportion of reward or penalty for overfulfillment of production quotas can be the total reward or total penalty, or the matter may proceed according to the actual conditions in fixing varying proportions. The broad suitability and great flexibility of this system make it greatly superior.

1. This system guarantees the superiority of the collective economy, enlivens the administrative levels of the rural economy, increases public enthusiasm and makes the production life of the masses more convenient. Before the speciality contract and joint production planned compensation responsibility system was put into effect the small handicraft workers and small businessmen were a difficult problem for the production brigades. After establishing this system they proceeded according to the actual conditions; some established speciality teams, some established speciality households, some became speciality individuals and some became seasonal speciality workers. After contracting for the speciality service or carrying out the large-scale guaranteed performance they handed over a certain amount of the profits, some only paid into the accumulation fund and public welfare fund and some carried out sole management and were responsible for whatever profits or losses occured. Because these commune members have a speciality and make more money than when workin the collective they generally contribute more than most commune members to the collective accumulation. In areas where this is the case the handicraft specialists and small businessmen became very active under the united leadership of the collective economy, the masses' production life became convenient and collective income increased. If these commume members do not perform collective work the other commune members work more and have more income so that the collective, small-scale handicrafters and commune members are all satisfied.

2. This system is beneficial in giving vent to production brigade control over the superiorities of the labor forces and in making a division of labor according to the comuune members' speciality and strength so that each person can work according to his ability. This is more prominent in the units which have developed diversified

management. For example, Nanhetou brigade in Xian county has achieved complete development in agriculture, forestry and side-line occupations and has established specality brigades to do farm work, side-line labor occupations, animal raising and machine servicing. These operate through a division of labor with each unit responsible for itself, and this has improved the commune members' sense of responsibility in all speciality brigades, improved enthusiasm for learning technology and promoted development in all areas. In some units lacking diversified management the assigning of fixed production duties according to the commune members' strength and speciality has enabled each of them to find his proper place. This is especially so in making arrangements for some cripples, semi-ablebodied labor forces and auxiliary labor forces which then require less supervision. For example, some brigades have blind people tend the restaurant fans and have old people look after the grounds and slop the hogs, and they are every bit as good as sturdy youngsters in these tasks.

3. In some units wherein the collective economy operates poorly or the production forces have low standards, after fixing farm output quotas for each household and implementing the speciality contract and joint production planned compensation responsibility system for machine servicing management, animal raising and other collective labor side-line industries, this not only helps in solving production problems in the fixed farm output quotas, it moreover supported the current collective economy, was able to gradually expand the collective economy and created a foundation for the transition to a higher level of responsibility in fixing quotas for household farm output. Before carrying out this responsibility system some brigades with fixed household farm output quotas took turns feeding the livestock, but nobody fulfilled their responsibility and the animals were thin, and some brigades even sold their machinery which created severe production problems. After implementing this system the commune families' production could not be separated from that of the collective so they all begged the collective to purchase machinery and cultivate land for the commune members. Practice has proven that those units which carried out a fixed household farm output quota restored the superior features of the collective features of the collective economy but did not bring back collectivization. It properly managed and gradually expanded the then yet small collective economy and gradually developed into one occupying a superior position.

4. This system suits the special features of farm production, is able to more precisely plan labor quality and labor quantity and can better embody the principle of distribution according to labor. There are great differences between farm labor and industrial labor, after a product of industrial labor is produced one can readily observe the quantity and quality of the expended labor. Farm labor is quite different as the results of this labor are only seen in the final production quantity. In terms of farm work, high quantity and good quality do not necessarily result in increased production. For example, if fields are watered too long with too much quantity and too much quality there will not necessarily be increased production and there might

even be reduced production. However, in the past under the unfluence of the leftist line, there were problems in labor planned compensation but no one dared proceed according to actual conditions in evaluating work and alloting work points so there were difficulties in having accurate standards for quality and quantity, and arguments lasting half the night brought no satisfactory conclusion. Implementation of fixed quota management was too complex and detailed and was unworkable without cadres of relatively high management standards. Implementation of a "Dazhai-style work point allocation method" promoted egalitarianism and blunted mass enthusiasm. Because joint production planned compensation suits the special features for calculating the quantity and quality of farm production, as soon as it appeared it was welcomed by the broad cadres and farm commune members.

In the current work of formulating an agricultural production responsibility system there are some comrades who always create an opposition between giving vent to the superiority of the collective and the individual commune member's enthusiasm. As they see things, giving vent to the commune members' enthusiasm means that the collective economy cannot be developed and even means dismembering the collective economy, selling the farm machinery and exchanging the large livestock for small livestock.

(3)

The speciality contract, joint production planned compensation responsibility system has a broad range of application, which demonstrates that it is a type of responsibility system that still is in the process of development. Consequently, in the current work of formulating an agricultural production responsibility system the production units which select the speciality contract, joint production planned compensation responsibility system must first firmly grasp the principles of suiting measures to local conditions andindividual leadership, proceed according to their own actual conditions and formulate their own contract and joint production methods. Conditions in the various production brigades greatly differ so there must be greatly differing actual methods. There can be no arbitrary uniformity or promotion of a single method. This emphasizes obeying the will of the masses and the leadership should not exceed its authority. They next must adapt to changing conditions and continually perfect the responsibility system. The direction of our agricultural development is building a specialized, socialized large-scale agriculture. Because of this, the perfect development of this responsibility system ought to be consistent with this direction. From the foundation of specialized, socialized large-scale agriculture we will gradually build a unified speciality contract, joint production planned compensation responsibility system. At present the perfection of this responsibility system requires the solution of the following problems:

Attention must be paid to seeing that commune members engaged in each type of production make a strong effort and receive fair compensation. Some units which have already carried out a speciality contract, joint production planned compensation responsibility system have elected to use a method of "submitting bids," so that whoever offers the highest production gets the contract. In the experimental stage it is all right to use this method, but if it became the standard method it would not be beneficial in supporting a commune member's speciality, it moreover will greatly endanger the income of commune members operating in all types of production and does not help in unifying control of the labor forces. For a great many reasons there now is great disparity in the compensation of commune members for the same type of work. For example, the labor of commune members who perform farm work contributes much less to the collective income than does work in an industrial side-line occupation. Because of this, when the joint production planned compensation system is implemented, actual conditions should be followed in formulating different reward ratios for different production activities. This is the only way to guarantee that commune members will receive generally similar rewards for similar labor.

2. Concrete conditions for rewards and penalties are different in all brigades, what is a suitable proportion in one brigade is entirely wrong for a different brigade. For example, in production brigades with relatively stable production conditions the reward and penalty proportion can be somewhat greater because the increases or decreases in production quantity are primarily determined by the contractor. In brigades lacking stable production conditions increased and decreased production are to a great extent related to the year's harvest, so if the ratio of reward or penalty is overly high it then does not adhere to the principle of distribution according to labor. The various production units have different conditions so the ratio of rewards and penalties cannot be identical. Some units have responsibility systems for planting through the harvest so the ratio is higher, even as high as the total reward because increased production and decreased production are both directly related to the contractors. As for those people responsible for field management, their work is not entirely under contract so it is not suitable to have total penalties or total rewards.

3. In terms of the problem of assigning responsibility to the teams, labor or individual the process must proceed according to the actual conditions. Because the methods suit the productions of each brigade they arrive at different regualtions. Farm production is complex. Some farm labor teams function well and can assume responsibility. For example, tractors always have two or more people who form a driver team and this ought to be calculated as a single vehicle. Some work requires more people to complete, such as industrial side-line occupations, in which it is very difficult to assign responsibility to labor and it must be assigned to the team. It is necessary to proceed form actual conditions within the team in selecting the various planned compensation methods. When farm field managment occurs under conditions of low-level mechanization most work procedures basically are scattered operations so responsibility can be assigned to labor or a team. In terms of the problem of assigning responsibility to labor or the individual, generally speaking, it is relatively

beneficial to assign responsibility to labor when there is unified control over the labor forces. However, as to implementing guaranteed performance or for complete reward and penalty units, contracting for the land according to the labor forces will gradually reduce the income of households with small labor forces and will not appreciably increase the collective's unified control. The distribution would be difficult to oversee so that those households would suffer severe hardships. After implementing the present responsibility system the farm labor forces were not reduced but made obvious increases, so to contract for land according to the population also permits management of households with many people but little labor. Under such conditions it suits mass opinion to carry out the assignment of responsibility to the individual, so adjustments ought to be made for those commune households which cannot and are unwilling to cultivate and do not want too much land. The will of the masses should not be neglected by imposing a labor responsibility system.

4. Regarding the problem of firmly grasping unification, the actual conditions must be observed in selecting different actions according to the brigade and the product. In brigades with high levels of mechanization it is possible to follow the principle of assignment of responsibility for field management to labor and to unify cultivation and harvesting. In brigades with relatively low levels of mechanization the degree of mechanization always varies so they also cannot be completely identical. Wheat is suitable for mechanized harvesting while cotton now primarily is picked by hand, so that responsibility can be assigned to the individual. However, because of the influences of the leftist line some people believed that the more unification the more advanced the responsibility system would be and insisted on unification where it was not needed, which resulted in many problems in production. For example, peanut harvesting is basically hand labor so responsibility can be assigned either to labor or the individual, however, some places insisted on unification of the harvesting, which resulted in considerable unnecessary labor.

The basic reason why the speciality contract, joint production planned compensation responsibility system is welcomed by the masses is because it unites the superiority of the collective with mass enthusiasm. Right now all places are working to perfect their responsibility systems by summing up experience to determine whether a unit's implementation of the speciality contract, joint production planned compensation responsibility system has been a success or a failure. This primarily ought to be judged on whether it promoted this sort of unity or harmed it. By using this as a standard by which to improve our work, this enormously vital responsibility system will certainly make developments and be perfected.

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BRIEFS

AGRICULTURAL RESEARCH MEETING--Tianjin, 29 Jan (XINHUA)--Research on rubber polyploid--an important item in breeding new varieties of rubber trees--was awarded first prize at a meeting of agricultural scientists held in Tianjin recently. Scientists at the South China Academy of Tropical Crops reported their gains in inducing polyploid clones, the basis of new species of rubber trees promising to thrive under harsh conditions and give more rubber. This find is of particular relevance to the growing rubber industry in China which began operation some 30 years ago. Among other prize winners is a virion insecticide especially made to kill bollworm, a widespread insect pest found in the land under cotton, corn, tomatoes and tobacco. The new chemical, produced by the Jianghu State Farm in central China's Hubei Province in cooperation with the Institute of Viruses under the Chinese Academy of Sciences, has been proven to be efficient after 5 years' experiments on different crops under varied climatic conditions in the country. The meeting, called by the Ministry of State Farms and Land Reclamation, discussed how to boost agricultural production with the help of scientific farming methods. [Text] [Beijing XINHUA in English 0713 GMT 29 Jan 81 OW]

FRESHWATER FISH CATCH RECORD--Beijing, 29 Jan (XINHUA)--An annual harvest of 1,126.5 kilograms of fish per mu (15 mu equals 1 hectare) of water was China's 1980 record for fishing in freshwater ponds, the State Aquatic Products Bureau announced today. This was achieved by a rural production brigade on the outskirts of Wuxi City, on the northern shore of Lake Taihu. The national average for the annual harvest of pond fishing, however, was only 230 kilograms per mu. The record was verified by a group of 50 experts from all over China who made investigations at the brigade last month. The brigade, on the Hojiang people's commune, tends some 1,046 mu of ponds for raising a dozen kinds of fish, mainly of the carp family. With help from experts of the Shanghai Institute of Aquatic Production, it has devised ways of ensuring healthy growth of all these varieties which live at various depths and have varying eating habits. The brigade was commended at the national science conference held in early 1978 for achieving an annual catch of 838.5 kilograms of fish per mu in 1977. [Text] [Beijing Radio in English 0755 GMT 29 Jan 81 OW]

NEW RURAL PUBLICATION--Beijing, 29 Jan (XINHUA)--The first issue of the COMMUNE AND BRIGADE ENTERPRISE WEEKLY [SHE DUI QI YE ZHOU KAN 4357 7130 0120 2814 0719 0436] was published on 24 January. The new weekly is edited by the ZHONGUO NONGMIN BAO, and its publication is approved by the State Agricultural Commission. The main task of the weekly is to publicize party and government principles and policies on developing commune and brigade enterprises, introduce local experiences in running commune and brigade enterprises and provide guidance for the sound development of commune and brigade enterprises. [OW02446] [as printed] [Beijing XINHUA Domestic Service in Chinese 0735 GMT 29 Jan 81 OW]

FORESTRY SEEDLING ACHIEVEMENTS--China's forestry industry has scored very great achievements in the growing of seedlings since the founding of the People's Republic. According to incomplete statistics, seedling nurseries now are operated by state farms or by communes and brigades at more than 20,000 places throughout the country, covering an area of more than 20 million mu. Annually, they complete the growing of seedlings for the forestry industry on more than 6 million mu, providing almost 10 billion seedlings, which substantially satisfies the needs of forestry production. The Ministry of Forestry has asked that from now on, vigorous efforts be made to get the state, collectives, and individuals commune members to grow seedlings so as to ensure adequate numbers to meet future afforestation needs. They have additionally asked that, whenever possible, locales selected growing sites, use superior varieties, and grow sturdy seedlings in order to provide superior quality seedlings for afforestation. In places where conditions permit, they ask for vigorous mechanized growing of seedlings, growing of seedlings in large sheds, and growing of seedlings in containers. This will bring about a rapid change in the current practice of growing seedlings only seasonally and planting forests seasonally, with the growing of seedlings and afforestation taking place in every season of the year. [Text] [Hong Kong ZHONGGUO XINWEN in Chinese 18 Nov 80 p 1] 9432

RADIO AGRICULTURAL SCHOOL--Beijing, 31 Jan (XINHUA)--The Central Radio Agricultural School will open in the second quarter of 1981. The school is jointly set up by the State (?Agricultural) Commission, the China Scientific and Technical Association, the Ministry of Education, the CYL Central Committee, the National Women's Federation, the Central Broadcasting Administration, the Central People's Broadcasting Station, the Ministry of Agriculture, the Ministry of State Farms and Land Reclamation and the Chinese Society of Agronomy. The school will provide agricultural-technical training for rural cadres, state farm workers and educated youth in the countryside through the rural broadcasting network. The courses offered by the school will be broadcast by the Central People's Broadcasting Station. [Beijing XINHUA Domestic Service in Chinese 0055 GMT 31 Jan 81 OW]

CSO: 4007

FUJIAN

CALL ISSUED FOR HALT TO DESTRUCTION OF FORESTS

Beijing RENMIN RIBAO in Chinese 8 Dec 80 p 2

[Article by Zhang Mingqing [1728 6900 3237], journalism postgraduate student, and Xiao Huijian [5135 6540 1367] and Xu Yiming [6079 0001 7686], correspondents; "Save Fujian's Forest Resources"]

> [Text] During the past several years, the depletion of forest resources throughout Fujian Province has been extraordinarily severe. Unless urgent action is taken to stop the cutting, 8 years from now there will be no forests to cut. It is hoped that the spirit of the urgent circular of the State Council will be put into effect, and that effective action will be taken to bring a quick halt to the wanton cutting and denuding.

Fujian Province is the foremost forest region in China, and it ranks fourth in the country in timber output. During the past several years, depletion of these forest resources has been extraordinarily severe. A great decline has occurred in the amount to be timbered. Authorities concerned estimate that on the basis of the current annual consumption of 20 million cubic meters of timber, and considering that the entire province has only 60 million cubic meters of mature timberable forests, with an additional 11.8 million cubic meters of middle-aged forests maturing annually there is enough for only 8 more years of cutting. For this reason, we urgently appeal: Save Fujian's forest resources!

"In mountainous regions, if rich you want to be; go up in the hills and cut down a tree" is the way some people think, and this is the way they act as well. In some communes and brigades where the members themselves are too busy, they hire people from elsewhere to go into the mountains and cut their timber. After having denuded mature forests, they start in on young trees. During the last half of last year, members of the Jiqi Brigade, Dafeng Commune, Nanping Municipality, swarmed over the mountains and wiped out 1,555 mu of mountain forests in a single sweep. Even the young forests of fir trees, for which the people had planted saplings back in 1974, were not spared. In 1955, this brigade had a reforestation rate of 65 percent, but now it is only 13 percent. When commune members need lumber, they have no choice but to go elsewhere to buy it. Jianyang Prefecture is the major timber-producing area in Fujian Province. It is currently depleting its forests at a rate of 6 million cubic meters annually, while growing only somewhat more than 2 million cubic meters. The amount of depletion is 2.5 times the amount grown. There are 348 brigades in that prefecture already without forests to timber, and in almost 50 percent of the brigades, all the Chinese fir has been cut down.

While the price paid by the state is somewhat over 40 yuan per cubic meter of lumber, the negotiated price is as high as 200 or 300 yuan. Furthermore, logs not included in the state plan may not leave the province, but after logs are sawed into "small lumber" they may be transported and sold in other provinces. Thus, some places do not hesitate to "turn big lumber into little lumber and long lumber into short lumber", and then transport it through various channels outside the province for sale at a high price. According to incomplete statistics, between January and June of this year the amount of lumber not in the state plan that was transported outside the province by rail amounted to 3,000 carloads more than for the same period last year, while the amount of wood for shipment to other provinces included in the state plan for the same period decreased by 2,104 carloads. Even more deserving of attention is the fact that it is common practice to sell fine lumber at negotiated prices, while inferior lumber is delivered to the state. The specifications for what constitutes "small lumber" are becoming larger and larger, with the maximum size now being as large as a railroad tie.

The rapid consumption and exhaustion of forest resources have already caused disastrous consequences for some mountain regions. There used to be a common folksaying in northern Fujian that went: "The Gaoyang firs can be endlessly cut, and Pucheng rice can be endlessly eaten." Now virtually all the "Gaoyang firs" have been cut down, and because of the destruction of the forests, in recent years the farmland in Pucheng has been stricken with drought almost every year, and a dramatic decline has occurred in forestry byproducts such as tung oil seeds, tea oil seeds, dried bamboo shoots, and mushrooms.

Now if the wanton cutting and denuding are to be halted, there must be conscientious implementation of the spirit of the urgent circular of the State Council concerning a determined halt to the wanton cutting and denuding of forests. First of all, state lumber production plans must be firmed up, and province and prefecture needs for lumber must be included in the state plan. As quotas are passed downward, there can be no increases made to the figures at every echelon. The cutting of timber must be done only when approved. A strict system of planned cuttings and of examination and approval of cuttings must be instituted.

Second, the practice of turning big pieces of lumber into small pieces of lumber for sale at high prices must be opposed, and strict controls must be placed on the use of large and fine quality pieces of lumber to prevent their use in the manufacture of plywood. The direction of overall use should be toward the development of manufactures and semimanufactures of wood chips, particle board, fiberboard, and furniture.

Third, there must be action to conserve on the burning of firewood, with the burning of coal and of methane gas being promoted. The severe waste of good wood in rural villages for firewood must be firmly halted.

It should be pointed out in particular that the key to achieving a basic turnaround in this situation is to correct the perception of every echelon of leadership. If they still cling to the idea that "cutting down trees is the way to wealth," and if they tacitly permit, connive in, or support wanton cutting and denuding, [illegible] actions cannot be carried out and the serious depletion of forest resources will be all but irreversible.

9432
CSO: 4007

BRIEFS

NEW TEA PLANTATIONS PLANNED--Local authorities in Ningde Prefecture of Fujian have decided to regard this autumn's land reclamation work and construction of tea plantations as major farmland construction work for this winter and next spring. Recently they held a conference on tea leaf production and adopted a decision to build in the next 3 years 150,000 mu of tea plantations in which high yield tea bushes will be closely planted. [Fuzhou FUJIAN RIBAO in Chinese 16 Oct 80 p 2]

CSO: 4007

BUMPER HARVEST OF GRAIN, OIL, SUGAR PRODUCED

Guangzhou NANFANG RIBAO in Chinese 7 Dec 80 p 1

[Article: "Depending on Policy and Depending on Science, Our Province Has Produced Welcomed Bumper Harvests in Food Grain Crops, Oil Bearing Crops and Sugar Crops This Year; Total Yield of Food Grain Crops Increased by 1.11 billion Jin, Total Production of Peanuts Surpassed 10 million Dan, Both Surpassing the Highest Levels in the Past; Estimated Increases in Sugar Cane Production Is Over 400,000 Tons"]

[Text] Our province produced bumper harvests of good grains, oil bearing crops and sugar crops this year. According to preliminary statistics, the sowing area of food grain crops throughout the province was reduced because of adjustment of the distribution of crops, but the total yield of food grain crops still registered an increase of 1.11 billion jin over last year, surpassing the highest level of the past. Autumn harvested food grain crops showed an increase of 1 billion over last year, an increase of 6 percent. Total yield of rice grains of the whole year increased by 1.52 billion jin, an increase of 4.9 percent. Total yield of late rice increased by 980 million jin over last year, an increase of 6.5 percent. Total production of peanuts reached 10.13 million dan, an increase of 1.55 million dan over last year, or 18 percent, surpassing the highest level in the past. Total yield of sugar cane is estimated to increase by over 440,000 tons over last year, an increase of 5.5 percent. Among the economic crops, except for bluish dogbane and jute and flue cured tobacco which produced reduced yields, tea and silkworm cocoon production also showed increases over last year.

Our province was able to achieve overall bumper harvests this year because the weather was good, and the several typhoon disasters did not occur during the key periods. Besides these objective factors, the main factor was the implementation of the party's policy and the popularization of scientific farming.

Since the beginning of this year, the localities of the entire province further implemented the autonomy of the production teams, established and made sound various forms of production responsibility systems, and mobilized the enthusiasm of the broad masses of commune members in production. At the same time, each locality adjusted the distribution of production according to plan under the prerequisite of assuring continued increases in food grain production, thus furthering overall development in agriculture. Our province's key food grain production region is the Foshan region. This year, each commune brigade used portions of the land that were easily damaged by alkalines which were detrimental to the growth of rice grains to plant economic crops under the prerequisite of assuring that the quotas of state purchases were satisfied and the food grains needed by the commune members were satisfied. Although the area of food grain crops sown throughout the entire region was reduced by 910,000 mu, the total yield of food grains still registered an increase of 395 million jin over last year. Increased yields were produced throughout the province and Shaoguan City, except Shenzhen and Zhuhai City.

This year, the entire province suited measures to local circumstances and propagated hybrid paddy rice such as "guichao," "guang er 104," "Shanyou 6" superior paddy rice varieties, and they have greatly contributed to producing bumper harvests of food grains. Throughout the province, hybrid paddy rice was planted in 2.5 million mu, "guichao" was planted in over 16 million mu, and on the average, one mu produced a yield of 50 to 60 jin in general some reached over 100 jin. Gaozhou County in the Zhanjiang area selected "Shanyou 6" superior variety as the late crop, and on the average, 150 to 200 jin more was harvested from each mu than from fields planted with ordinary varieties. Hybrid paddy rice was popularized over large areas in the Shaoguan region, and the annual increase in rice grains was 60 million jin. The Huiyang region planted 600,000 mu of peanuts this year, and of these, over 500,000 mu of low yielding fields were used for rotation cropping of peanuts and paddy rice. Although the area of food grain crops sown in the entire region was reduced by 400,000 mu, but the total yield of rice grains still registered an increase of 290 million jin over last year, an increased yield of 380,000 dan of peanuts was produced, constituting an increase of 34 percent. The high and cold mountain regions of northern Guangdong changed double season rice to one crop of beans and one crop of rice (intermediate rice), avoiding frequent cold damage to late rice crops. The yield of the one crop of intermediate rice surpassed the yields of two crops of paddy rice, and the results were good. In scientific utilization of fertilizers, there were new breakthroughs this year. From January to September, a total of 3,331,000 tons of chemical fertilizers was sold, an increase of 576,000 tons over the same period last year. The sales of potassium fertilizers increased by over 23,000 tons. According to surveys taken in the counties of Dongwan, Kaiping, Zengcheng, Bolui, each additional application of potassium fertilizers can produce an increase yield of 3 to 6 jin of rice grains, some yields have reached over 10 jin. This is also one factor that increased the yields of food grain crops.

9296
CSO: 4007

REGIONAL SPECIALIZATION OF AGRICULTURE IN GUANGDONG DISCUSSED

Guangzhou NANFANG RIBAO in Chinese 3 Oct 80 p 2

[Article by Zheng Tianxiang [6774 1131 4382], Zeng Xiangzhang [2582 4382 4545], and Liu Qi [0491 3823], Geography Department, Zhongshan University: "Only Regional Specialization Can Make the Most of Guangdong's Agricultural Advantages"]

[Text] Guangdong possesses superior natural conditions and abundant resources for the development of agriculture. But a wide disparity in natural conditions exists from one region to another. There are very clear differences as well from one prefecture to another in socio-economic conditions, the history of development, methods used to improve upon the use of nature, technical attainments, customs, etc. Consequently, only through developing agricultural production on the basis of differences in nature from region to region, economic conditions and characteristics, and the adaptation of general methods to local situations can fullest use be made of Guangdong's agricultural advantages.

Guangdong's northern mountain region is a self-contained unit. The tropical south including Zhanjiang and Hainan may be divided into two regions. The islands in the South China Sea may be separately differentiated. The midportion of the province, with its great disparities in water systems, topography, and socio-economic conditions, may be divided into four different agricultural regions: Xijiang, the Greater Pearl River Delta, the upper reaches of the Dong Jiang and Han Jiang and the Chaozhou-Shantou Plain. Thus, the entire province may be divided into a total of eight different agricultural areas.

On the basis of the conditions and characteristics of these eight agricultural regions, we have some ideas about the course of development of each region that we would like to discuss with everybody.

The Beijiang Region: Includes most of Shaoguan Prefecture (the southern part of Qingyuan excepted), as well as Xinfeng, Longmen, and the northern part of Conghua County, covering an area of about 40,000 square kilometers, which can be built into China's largest commercial timber forest base with fir predominating. This region presently has more than 30 million mu of forest land, most of which is a timber forest. The area of this timber forest and the quantity of its reserves both amount to about one-third the totals for the entire province, and barren hills suitable for forests amount to an additional approximately 10 million mu in area. This is the principal area in Guangdong for production of China fir, with a fir tree area amounting to half that for the entire province and fir reserves amounting to about

70 percent of the total for the entire province. One hundred thirty-eight of the 360 timber forest base communes in the province are located here. The masses have experience and are accustomed to farming the hills and running the forests. The forestlands and lands suitable for forests cover a broad area, and the Beijing-Guangzhou Railroad, the Beijiang and its tributaries traverse it north to south, making both water and land transportation convenient. In addition to the development of timber forests, suitable development made be done in tea-oil, tong oil, tea, Chinese chestnuts, persimmons, plums, and cattle and sheep. The purple shale prefectures of Nanxiong and Shixing are suited to the growing of tobacco.

The Xijiang Region: Includes most of Zhaoqing Prefecture (with the exception of Gaoyao and the southern part of Sihui), as well as Xinyi, Gaozhou, and the northern part of Yangchun County covering an area of more than 20,000 square kilometers where Guangdong Province's pine, Chinese fir, and bamboo bases may be built. This region currently holds a forest area of more than 17 million mu, four-fifths of which is timber forest, and almost 5 million mu of which is barren hills suitable for forests. "Huaiji wood," and "Guangning bamboo" are famous inside and outside the province. Conditions favor development of the forestry industry in this region where water transportation on the Xi Jiang, the Sui Jiang, and the Nan Jiang, and highway transportation are convenient. The river valley basins are quite broad, and the foundation for grain production is better here than in other mountain regions. This region is also accustomed to a diversified forestry economy in which rosin production has accounted for two-thirds of the provincial total and one-fourth of the national total; annual output of Chinese cassia has been from 80,000 to 90,000 dan, and processing of bamboo has proliferated. The economic income from these special forest products is great, and they should be well run.

The upper reaches of the Dong Jiang and the Han Jiang: Includes the northern part of Huiyang Prefecture (Boluo and the area to the north of northern Huiyang County), and most of Meixian Prefecture (with the exception of the southern part of Fengshun), covering an area of almost 30,000 square kilometers, characterized by numerous hills and numerous people where multipurpose forestry bases may be built. In Meixian Prefecture, however, cultivated land per capita is only about 0.6 mu and cultivation is overly intensive. Erosion of the upper reaches of the Dong Jiang and the Han Jiang is serious, and the area of bald and barren mountains is vast. In Wuhua and Xingning, forests to conserve water should be developed with headwater forests being cultivated along the rivers. Dapu should develop firewood and charcoal forests (for use in baking porcelain), and other mountain regions should develop timber forests. The hills are suited for the growing of tea, tea-oil, tung oil, citrus fruit, and shellac trees, with people who live in the hills making their living in the hills while also protecting the broad agricultural regions in the middle and lower reaches of the Dong Jiang and the Han Jiang.

The Pearl River Delta Region: Located in the lower reaches of six rivers including the Dong Jiang, Xi Jiang, Beijiang, Tan Jiang, Liuxi He, and the Zeng Jiang, and including all of Foshan Prefecture, the southern part of Guangzhou Municipality (south of Xinfeng and Longmen), Shenchuan, Zuhai Municipality, Dongguan County, as well as Gaoyao, the southern part of Sihui, the southern part of Qingyuan County, Boluo, and the southern part of Huiyang County. This region has a vast plains area; the soil is fertile; water and heat resources are abundant, transportation is developed; it is close to metropolitan areas, the labor supply is copious, and the technical attainments are high. This region is Guangdong's granary, and it is also a base for diversified economic crops, particularly sugarcane, silkworm, mulberry, and pondfish. This region's cultivated land is one-third of the total in the province, and it provides more than one-half of the province's commodity grain, 60 percent of its sugarcane, 80 percent of its pondfish, more than 90 percent of its silkworm mulberry, and more than 50 percent of its tropical fish. It also occupies an extremely important place in the province's production of jute, vegetables, and flowers and plants. It is Guangdong's most developed farming region. This region is to be guilt into the paramount commodity grain base in the entire country. In order to increase output of grain here, stress must be placed on increasing per unit yields. In the Pearl River Delta, heat and soil conditions are in no way inferior to those of the Chaozhou-Shantou Plain, and agricultural techniques and equipment, electric power and fertilizer supply, are better than on the Chaozhou-Shantou Plain. But per mu yields are more than 300 jin lower than for the Chaozhou-Shantou Plain, mostly because of differences in the techniques of caring for crops; consequently the potential for increased per unit yields is very great. If per unit paddy yields on the more than 10 million mu throughout the region were to be increased from their present somewhat more than 900 jin to the 1200 jin already attained on the Chaozhou-Shantou Plain, grain output could be increased by more than 3 billion jin. Would this not solve Guangdong's current grain problems? Simultaneously with increased efforts to increase per unit grain yields can be the putting aside of a little land for the development of sugarcane and other economic crops.

The Chaozhou-Shantou Region: Located to the south of the Lianhua mountain range with the mountains at its back and its face to the sea, it includes all of Shantou Prefecture, southern Fengshun, and a small portion of Huidong. This region has an area of about somewhat more than 16,000 square kilometers, accounts for 8 percent of the land area of the province, and has one-fifth the population of the province. Land per capita averages between 0.3 and 0.4 mu. It is suited to the development of economic crops and fishing industry production. This region clearly may be divided into two large tracts. The Chao-Shantou Plain is a high output area where paddy rice, sugarcane, oranges, vegetables and peanuts all have high output, and where an intensive horticultural industry that includes rotational cropping, intercropping, and companion cropping should be run. In this region, hilly area occupy virtually half of the land area on which, in addition to development of firewood and charcoal forests, there should be the development of a diversified economy, with an expansion of the production of oolong tea in the Fenghuang Mountains. On the Haifeng-Lufeng-Huilai tableland, drylands account for 45 percent of the farmland, so wetlands and drylands are of equal importance. Sugarcane, peanuts, sweet potatoes, and pineapples are grown on drylands, with peanuts being grown on sandy, infertile tablelands. Currently, their commodity oil amounts to one-fourth of the province's total, and its development should continue.

Zhanjiang Region: All of Zhanjiang Prefecture with the exception of Xinyi, Gaozhou, and the northern part of Yangchun counties, covering an area of nearly 30,000 square kilometers. This area is located on the edge of the tropics where the quantity of heat is abundant and virtually frost free, where sugar and edible bases for the the entire province may be built. In this region light and heat conditions are extremely favorable for the growth of sugarcane throughout the year; soil resources are abundant, and numerous wasteland and reclaimable marine beach areas may be developed as reserve soil resources. Sugar manufacturing facilities and technical forces also very much dominate. Though soil quality is sandy and infertile and somewhat arid, causing low per unit yields at the present time, improvement is not extremely difficult. Underground water resources are abundant, providing the possibility of correcting the aridity. The peanut growing area of this region amounts to one-fourth that of the entire province; the sesame area amounts to one-fifth; the soybean area amounts to one-fourth; and the tea-oil area amounts to one-fourth. It has been termed Guangdong's oil depot. In future, great development can be done here. In the northern part of this region lie the Yunkai Mountain and the Yunwu Mountains, which act as a protective screen, making the area suitable for rubber production. One million mu of the region is already dedicated to the growing of rubber trees, which is 30 percent of the rubber growing area of the province, and more can be developed. This is the rubber base in China second only to Hainan Island. Diverse tropical crops including pepper, lemon grass, sisal, and jackfruit may also be suitably developed.

South China Sea Islands and Coastal Region: Includes the four archipelagos of Dongsha [Pratas Islands], Xisha [Paracel Islands], Zhongsha [Macclesfield Bank], and Nansha [Spratly Islands], and the coastal belt. Development of aquatic products is the main trend in this region. The South China Sea Islands are bases for development of deep-sea fishing. Here guano can also be collected, and sea turtles, conch, sea slugs, the adductors of pen shells, starfish, and algae such as agar can be either fished for or gathered. These islands also produce bird's nests, a food delicacy. This is a vast ocean area where the continental shelf suitable for fishing covers an area of 440,000 square kilometers, the Tongking Gulf 120,000 square kilometers, and where the sea coastline is several thousand kilometers long. All this is extremely favorable for the development of aquatic products. In most coastal areas, the soil is sandy and infertile, and arable land is scant. The people here have "lived off the sea," principally from fish and salt. In-shore fishing grounds are currently being overfished and conservation measures must be adopted, while at the same time active efforts have to be made to develop ocean hatcheries.

If Guangdong is to take full advantage of agriculture, regional specialization is imperative. In order to provide data for the formulation of agricultural plans, Guangdong Province is now in process of making a survey of agricultural resources and doing agricultural zoning in a systematic study of a rational structure and pattern of agricultural zones. We have used the opportunity presented by NANFANG RIBAO for discussion of "How To Make the Most of Guangdong's Advantages To Enliven the Economy" to offer a few commonplace remarks in the hope of evoling valuable opinions from others, boldly and to the point proposing some ideas for the regional specialization of agriculture in Guangdong with the goal of drawing on collective wisdom and absorbing all useful ideas.

9432
CSO: 4007

MANAGEMENT OF WINTER CROPS STRENGTHENED

Guangzhou NANFANG RIBAO in Chinese 12 Dec 80 p 1

[Article by Su Qixuan [5685 0366 2467]: "Crops Must Be Planted Well and Managed Well, Efforts Must Be Exerted to Improve Unit Yields; Our Province's Farm Villages Have Concretely Strengthened Management of Wintering Crops"]

[Text] The broad masses of cadres and masses in the farm villages of our province seized a bumper harvest of the late crop and marched forward under victory to implement concrete measures to strengthen field management of winter crops in an effort to realize high yields and to harvest more.

During the winter planting season of this year, the leadership of all levels, at all localities paid attention to grasping the objective patterns, developed the superiorities of the localities, and did the work of winter planting and production well. According to statistics released at the end of November, over 7 million mu of land were planted with various kinds of wintering crops. Except for a reduction from last year in the area planted with wheat and green manure, more broad beans, peas, rape, winter tobacco, vegetables and autumn-planted sugar cane were planted than last year. In view of the reduction in the area of planting various types of food grain crops and green manure from past years, each locality paid attention to grasping tightly field management, and exerted efforts to improve the unit area yield. Foshan region grasped the management of 350,000 mu of wintering green manure to seize a bumper harvest in agricultural production next year as an important measure, and strived towards providing organic fertilizers for 700,000 to 800,000 mu of rice fields of the early crop. Namhai county further strengthened and perfected the production responsibility system for winter planting and the unit and the family took responsibility for production. Full time personnel were assigned to manage production, and surplus production was rewarded. Each production team assigned two to three people to manage the green manure crops on a full time basis. At present, ditches have been dug and fertilizers have been applied over 80,000 mu of astragalus chinensis throughout the county, and fields affected by drought have been irrigated in time. Enping County applied fertilizers early to wheat and irrigated the fields in time based on the characteristics of warm weather, less rainfall and high temperatures during this period. Huazhou County led cadres and masses to count the yields of food grains and the economic income from winter crops, thus summarizing the lesson and experience that early management and careful management will realize high yields and late management and careless management will result in low yields in view of the fact that some cadres and masses believe that since agricultural bumper harvests were realized this year the situation of food grain production was better than past years, and thus paid less attention to management of winter food grain crops. The relaxed ideology was overcome and the work in drought resistance and preserving seedlings were done well. Throughout the county, 180,000 mu of winter yams have been banked, fertilized and irrigated to establish the foundation for high yields.

9296
CSO: 4007

DEVELOPMENT OF HYBRID RICE, DISEASE-RESISTANT RICE

Guangzhou NANFANG RIBAO in Chinese 5 Nov 80 p 1

[Article by Li Liaoyu [2621 1675 5148] and Ma Yaoxing [7456 5069 2502]]

[Text] The Provincial Department of Agriculture recently convened a provincewide hybrid rice meeting onsite in Lechang County in order to study how hybrid rice is developing in Guangdong Province. Through actual cutting of the grain, onsite observations, and exchanges of experiences, comrades at the meeting further affirmed the advantages of hybrid rice for increased output and the potential it offers. They also analyzed conditions in Guangdong Province favoring the development of hybrid rice, and they made recommendations as to how each locale could actively promote the spread of hybrid rice by adapting general methods to local situations in order to accelerate the development of Guangdong Province's grain production.

During the past few years, Guangdong Province has had striking success with the test planting and spreading of hybrid rice. Throughout the province this year, hybrid rice was planted on 2.2 million mu, an increase of 500,000 mu over last year. Of this total, early rice was planted on 540,000 mu, all of it yielding a bumper harvest. Late rice amounted to about 1.7 million mu, and prospects are for a substantial increase in output. Looked at in terms of the results of experience in each place, hybrid rice generally produces yields of from 50 to 100 jin or more per mu than conventional rice in the same season.

Comrades attending the meeting felt that the main reasons for the quite high output of hybrid rice were its well-developed root system, its strong ability to absorb fertilizer, its high heading rate, its high chlorophyll content, its large panicles, its numerous grains, and its grain weight. Furthermore, its ability to mature early when planted as a late crop effectively avoids damage from "cold dew wind." Consequently, when planted as a late crop in the north and in mountain regions, hybrid rice produces both high and consistent output. When used in south-central regions, hybrid rice has fairly high powers of resistance to bacterial blight, thanks to the selective breeding of disease-resistant combinations over a period of several years. Planted as a late crop, it matures early, is disease resistant, and has a high output.

The meeting noted that it currently is more difficult to promote hybrid rice than conventional varieties, an important reason being that in many areas of Guangdong Province, problems of seed production in volume and of purity have not been ironed out. Each year it is necessary to go to Hainan Island, where seeds are propagated over wide areas, or to Hunan, Jiangxi, or Guangxi provinces at great cost to buy seeds. Therefore, the meeting demanded that each locale set up and perfect a system for breeding and production of seeds whereby the counties do the breeding, the communes the production, and the brigades the using. In new areas where seed propagation has not been ironed out, and in places where the masses lack sufficient confidence in hybrids, a system of guaranteed production may be used. In remote mountain regions, production teams may propagate seeds for their own use.

The meeting emphasized that the propagation and production of seeds and open field production techniques are all in fairly good shape, but that each jurisdiction should effectively strengthen leadership, actively train a corps of technicians, and perfect a four-echelon farm science network organization to work closely with authorities concerned so as to ensure that hybrid rice will be promoted step by step for high and consistent output.

New developments have taken place, and the prognosis is good for work in the breeding of resistant rice underway at the Plant Protection Institute of the Provincial Academy of Agricultural Science. Recently the Provincial Academy of Agricultural Science assembled seed management units, rice-breeding units, and some officers in charge in county and commune farm units where bacterial blight of rice is endemic, in order to evaluate several bacterial blight-resistant rice varieties bred for them.

Bacterial blight is the disease that most threatens the normal growth of the late crop of rice in Guangdong Province. Use of agricultural chemicals to prevent and control this disease means high cost and great expenditure of labor, and the residual farm chemicals readily create environmental pollution. For these reasons, the Plant Protection Institute has made the breeding and selection of rice varieties that possess strong resistance to bacterial blight a major scientific issue. As a result of unrelenting efforts, they have preliminarily bred five fairly ideal varieties. These varieties have separate individual characteristics. Some have definite bumper output characteristics and fairly good overall characteristics, some have quite excellent rice quality characteristics, and some ripen fairly early.

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CSO: 4007

GUANGDONG

RURAL VILLAGES MUST NOT NEGLECT GRAIN, GREEN MANURE CROPS

Guangzhou NANFANG RIBAO in Chinese 14 Nov 80 p 1

[Article by Commentator: "Simultaneous Attention to Grain, Fertilizer, and Money Needed in Winter Planting"]

[Text] Rural villages throughout Guangdong Province are currently in the midst of autumn harvesting and winter planting. Judging from the winter planting and production arrangements in each locale, numerous places will be able to correctly manage the relationship between grain and money--i.e., they will give attention to the development of economic crops while keeping a firm grip of grain production. However, there are other places in which the enthusiasm for making money is very high, but where little or no grain or green manure has been planted. This problem should arouse attention everywhere.

Winter planting and production in Guangdong Province has historically been diverse, rich, and varied. Numerous communes and brigades have eradicated the influence of "take grain as the sole link," have acted realistically to reduce some of the grain area, and have set aside land for an increase in the growing of economic crops. This serves to increase the cash earnings of commune members and to consolidate and strengthen the collective economy. However, we should realize that the grain foundation in Guangdong Province is still very weak, and that the level of consumption grain for commune members is still not high. Despite the universal bumper harvest this year, it still cannot be said that grain is abundant. Grain planted in winter and harvested in spring in Guangdong Province usually amounts to between 1.2 billion and 1.8 billion jin per year. This is of extremely great significance in providing for the livelihood of the masses. If the area planted to grain is greatly diminished and the output of winter-planted grain is greatly reduced, this will have a great effect on the grain provided next spring for the livelihood of the masses and for the grain basket of the entire province. Therefore, bumper harvest and poor harvest brigades must all pay attention to overall planning, taking all factors into consideration in winter planting and production, combining grain, fertilizer, and money. In places where grain tends to be in short supply, it then is even more important to figure up one's own grain accounts and to make efforts to plant more grain.

If next year's grain is to show new increases in output, more fertilizer will be required. Winter growing of green manure is a major activity for increasing organic fertilizer, increasing soil fertility, and promoting increases in agricultural production. There are numerous kinds of green manure that can be grown in winter. In addition to Chinese milk vetch, there are radish greens and azolla. Additionally, ther are rape, pulses, and vegetables, crops from which both oil and fertilizer or grain and fertilizer may be obtained, and which may be planted by adopting general methods to local situation. From many of these crops, both money and grain can be harvested, thereby killing two birds with one stone.

A good job of winter planting and production also requires that rural village economic policies be further put in place. The party's instructions must be observed, with improvements in administration and management, the institution of distribution according to work, and a strengthening and improvement in the systems of responsibility for production, acting as key links for further consolidating the collective economy and developing agricultural production, and acting as basic guarantee for the development of winter planting and production, concentrating efforts on paying close and careful attention to it. We must purge the effects of leftist mentality, sweep away obstacles, adapt general methods to specific situations, give discrete guidance, and, in accordance with local levels of productivity and the degree of consciousness of the masses, promote various forms of systems of responsibility for production to arouse to the full the enthusiasm of the masses. Land that the collective does not plant completely may be loaned to commune members for planting, provided this does not adversely affect next year's spring planting. Commercial units should conclude purchase and marketing contracts with communes and brigades as early as possible, open supply and marketing channels, procure commodities promptly, and promote the development of winter planting and production.

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CSO: 4007

GUANGDONG

BRIEFS

NATURAL RUBBER BASE--Perenially green Hainan Island has set up a natural rubber production base which is beginning to take shape. Beginning in 1951, the emancipated peasants of all nationalities responded to the call of the party to organize a large-scale civilian work corps, which began to clear land to grow rubber. Later on, a large number of officers and men of the Liberation Army, as well as local cadres, intellectuals, workers from cities and towns, and patriotic overseas Chinese who had returned to China, assembled on Hainan Island to form a farm reclamation army. With the enthusiastic help of the local people they arduously pioneered and developed tropical crops, of which the growing of rubber was paramount. Now, throughout the island, 97 state farms (tea), including state overseas Chinese farms, has been established and employ almost 500,000 people. They cultivate more than 2.7 million mu of rubber. The tapping of more than 1.2 million mu of rubber trees has begun to provide the state 70,000 tons of dry rubber annually, making it the main production base for natural rubber in the entire country. Every state farm has also actively developed various kinds of tropical economic crops, fruits, and other agricultural, livestock, and sideline production. The profits they turn over to the state have increased year by year; as of 1979, net profits had already surpassed total investments by the state since farm reclamation activities on Hainan Island began. Great development has also occurred in rubber-processing industries. The 651 state farm and people's commune natural latex processing plants (farms) can daily manufacture about 500 tons of dry rubber sheets. There are more than 600,000 mu of rubber operated by communes, brigades and the people throughout the island. [Text] [Beijing RENMIN RIBAO in Chinese 9 Dec 80 p 1] 9432

SUPERIOR RICE VARIETY--"Guizhao No 2" superior rice variety, which was bred by Huang Yaoxiang [7806 5069 4382], deputy director of the Guangdong Provincial Academy of Agricultural Sciences, and his colleagues, placed first in quantity of output as the last crop this year in comparative test plantings of early ripening international rice varieties conducted by the Provincial Academy of Agricultural Sciences. Single crop yields amounted to 897 jin per mu, for an average daily output increase of from 0.73 to 4.57 shijin over 27 varieties from other countries and from China's Taiwan Province. This year, the Guangdong Provincial Academy of Agricultural Sciences and the International Rice Institute agreed upon a test-planting plan for early ripening varieties of rice, whereby comparative tests would be conducted among 28 early maturing rice varieties provided by the International Rice Institute. Eight of these 29 superior varieties of rice came from the International Rice Institute, seven from India, six from Bangladesh, one from Pakistan, one from Thailand, one from Iran, one from the Philippine Islands, and three from China, of which two came from Taiwan Province. The Provincial Academy of Agricultural Sciences made comparative test plantings in test plots, in accordance with the testing requirements. The results demonstrated that under identical conditions, output from "Guizhao No 2" was highest. The Provincial Academy of Sciences has already informed the International Rice Institute of the results. This test has demonstrated once again that in the Guangdong area, "Guizhao No 2" is a high-output, superior variety. [Text] [Guangzhou NANFANG RIBAO in Chinese 29 Nov 80 p 1] 9432

INCREASED FUNDS FOR GRAIN STORAGE--This year, Guangdong Province had a bumper harvest of grain and oil-bearing crops, and the peasants have eagerly sold grain and oil to the state. But in some places, a shortage of storage capacity in state warehouses has hurt grain storage. Recently the Provincial Grain Department made outlays of 3.5 million yuan to grain units in various prefectures for the construction of warehouses, with emphasis on solving difficulties with inadequate storage capacity in grain-producing areas and in some transfer warehouses. The Provincial Grain Department has asked the various prefectures to get these funds at once to the places with a severe shortage of storage capacity, and to make sure these special funds are used for the special purpose intended. They may build temporary storage sheds, simply constructed warehouses, or regular warehouses, but they must be sure to adapt general methods to local conditions for economic utilization. [Text] [Guangzhou NANFANG RIBAO in Chinese 29 Nov 80 p 1] 9432

HAINAN RUBBER--Hainan Island has built its first latex processing industry and rubber articles industry. Currently, all state farms and people's communes throughout the island have jointly built a natural latex processing plant and 651 processing plants capable of manufacturing daily about 500 tons of dry rubber sheets. They have also built eight rubber manufacturing plants from which the motorcar, tractor, and bicycle tires and rubber shoes they produce are sold in distant markets in China and abroad. The state allocated a large sum of capital and materials to build rubber production bases on Hainan Island. The initial group of rubber trees were first tapped in 1958, and in that same year construction began on some latex processing plants. From 1958 until 1976, latex processing was done by using firewood for heating and smoking. For every ton of smoked rubber sheets produced, a cubic meter of timber was burned. Costs were high and quality low. Beginning in 1976, a pellet rubber processing plant using heavy oil as fuel was built. The degree of mechanization was fairly high, and the pellet rubber produced was of good quality. Cost per ton declined 24 percent from the cost of smoked rubber sheets. Presently, pellet rubber sheet production amounts to 60 percent of total production of dry rubber sheets. The eight rubber goods manufacturing plants on Hainan Island produce a total of 56 different kinds of rubber manufactures, with an annual output value of 60 million yuan. [Text] [Guangzhou NANFANG RIBAO in Chinese 3 Nov 80 p 1] 9432

CATTLE RAISING--Since the beginning of this year, our province's commune members and families in farm villages have made great progress in cattle raising. Up to the end of November, the entire province's families raised 238,500 head of cattle, an increase of 169,000 head over last year. In February of last year, the provincial revolutionary committee issued regulations concerning several problems in reviving and developing cattle raising, reemphasized the policy of encouraging and supporting the people and families in cities and villages to raise cattle, thus pushing forward the revival and development of cattle raising by families. The Zhanjiang region provided 8.7 million yuan of low interest loans this year to help commune members develop family cattle raising. At present, the entire region already has 95,000 farm families raising over 106,000 head. One of the bases of draft cattle on Hainan Island, Dingan County, provided 860,000 yuan of loans to to commune members to raise cattle and also established six additional draft cattle markets inside the county to make it easy for commune members to trade draft cattle. At present, families of commune members of this county are raising 6,000 head of cattle. [Article by Lu Heyuan [4151 0735 3293]] [Text] [Guangzhou NANFANG RIBAO in Chinese 14 Dec 80 p 1] 9296

TEA OUTPUT--According to statistics of concerned departments, this year, our province's total production of tea reached 230,000 dan, an increase of nearly 10 percent over last year. Increased production was realized at such bases for tea production as Yingde, Gaohe, Chaoan, Yaoping, Qingyuan, and Gaozhou counties. From last winter to this spring, nearly 30,000 mu of land was reclaimed for tea plantations, thus at present, the total area of tea plantations has surpassed 600,000 mu. The area of tea plantations of the famous "yingde black tea" has been expanded to 60,000 mu. This year, nearly 40,000 dan of tea was produced, an increase of more than 20 percent over last year. Chaoan County which is famous for its "oolong tea" produced over 9,000 dan of tea this year, an increase of 15 percent over last year. [Text] [Guangzhou NANFANG RIBAO in Chinese 3 Dec 80 p 1] 9296

SOYBEAN HARVEST--Our province produced bumper harvests this year, and the total yield registered an increase of 300,000 dan over last year, an increase of 15 percent, the total yield and unit both surpassed the highest levels in the past. Soybean is a crop that can be harvested for food, oil, vegetable and fertilizer. Soybeans can be planted year round in our province. Development of soybean production serves importantly in diversifiying and improving people's livelihood, increasing exports and improving the soil and fertility of the land. In recent years, farmers at all localities dug for the potential of the soil and created the rotation system or interplanting system of such crops as soybeans and paddy rice, sugar cane, potatoes and cassava through practice. This has caused the planting area of soybeans to increase year after year and the yields have continuously increased. [Article by Lu Heyuan [4151 0735 3293]] [Text] [Guangzhou NANFANG RIBAO in Chinese 13 Dec 80 p 1] 9296

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BRIEFS

TOBACCO PRODUCTION--Muling County, Heilongjiang, procured 3.48 million jin of sun-cured tobacco in 1980, 35.4 percent more than in 1979. [Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 30 Jan 81]

BUMPER HARVEST--According to HEILONGJIANG RIBAO, our province overcame severe natural disasters and reaped a bumper agricultural harvest in 1980. According to statistics recently compiled by departments concerned, the total output of grain, soybeans and potatoes is expected to be 29 billion jin, the third good year for the province. In addition to increase in grain output, our province also set new records in the total output and procurement of three major cash crops, including beets, flax and sunflower seeds. Because of the overall bumper agricultural harvest, agricultural income will increase by 4.5 percent over that of 1979 and the average per capita income of commune members will increase from 110 yuan in 1979 to 115 or 120 yuan in 1980. Presently, cadres, commune members and farm staff and workers in the provincial rural areas are in high spirits and are enjoying a stable life. Last year our province experienced low temperatures and drought in spring, high temperatures and scanty rainfall in summer and plenty of rainfall in autumn which greatly affected agricultural production. Hejing and Mudanjiang Prefectures and agricultural farms in the eastern part of the province, where natural conditions are better, were hit by heavy winter snowstorms which made reaping a bumper grain harvest difficult. Thanks to the implementation of economic policies, enforcement of production responsibility systems and the readjustment of agricultural structures, our province still increased production and income because the enthusiasm of the cadres, commune members and farm staff and workers was mobilized. [Text] [SK311251 Harbin Heilongjiang Provincial Service in Mandarin 2200 GMT 30 Jan 81]

SURPLUS GRAIN--Six prefectures and 62 counties in Heilongjiang Province had sold 1.268 billion jin of surplus grain to the state by 20 January 1981. Songhuajiang Prefecture had sold to the state 457 million jin of surplus grain and Suihua Prefecture 340 million jin. Bayan and Suihua counties together had sold over 100 million jin of surplus grain by 20 January 1981. [SK230828 Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 22 Jan 81 SK]

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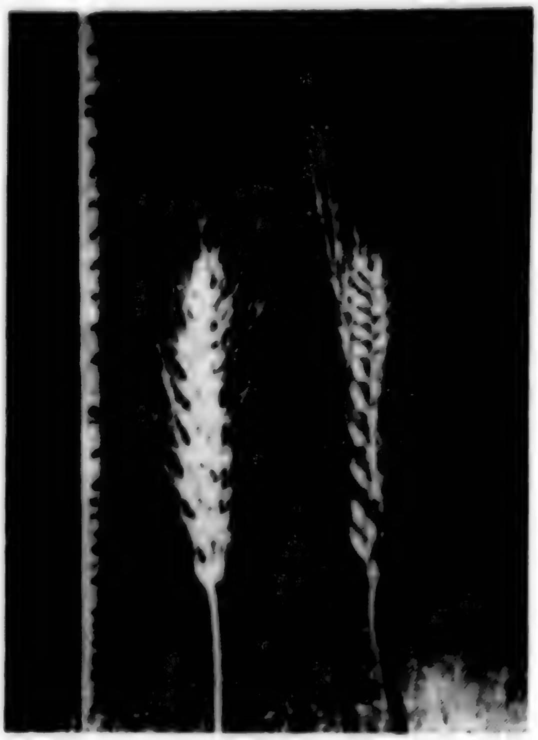
SUPERIOR WHEAT VARIETIES INTRODUCED

Chengzhou HENAN NONGLIN KEJI [HENAN AGRICULTURAL AND FORESTRY SCIENCE AND TECHNOLOGY] in Chinese No 9, 10 Sep 80 inside front cover

[Text] Wanyuan 28-88:

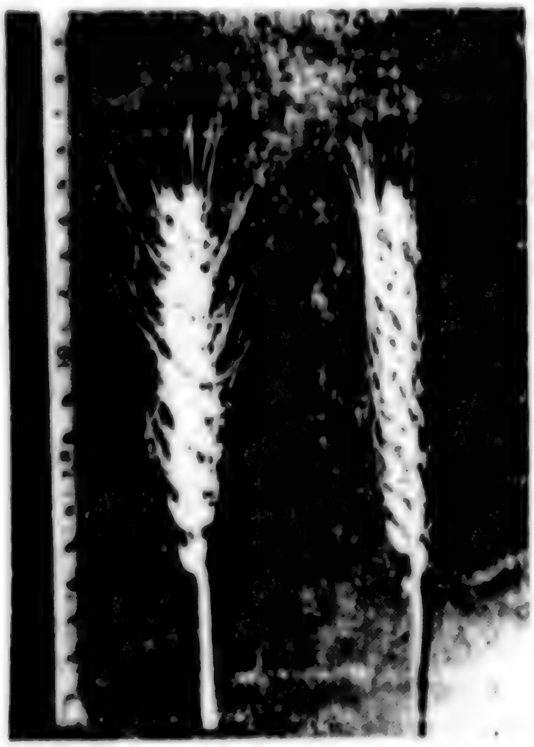


The Nanyang Regional Agricultural Science Institute used the ST2422/464 as the female parent and Neixiang No 5 as the male parent to breed second generation hybrids in 1972. After the hybrids were subjected to Co60 X-ray radiation and induced mutation by DES chemical agent, the hybrid line was selectively bred. In 3 consecutive years of provincial regional experiments, the variety produced an average per mu yield of 729.4 jin in the southern regions, an increase of 20.11 percent over that of Zhengying No 1 and won third place. In the northern and central regions, the per mu yield was 837.15 jin, an increase of 14.19 percent over that of Zhengying No 1, winning fourth place.

The variety is vernal, the plant height is 87 centimeters, the tillering strength is intermediate, the spikes are spindle shaped, the awns are long, the husk is white, the grains are white, each spike has 37 grains, the thousand grain weight is about 40 grams, it is highly resistant to stripe rust disease, it is medium sensitive to leaf rust disease. The grains fill fast, the plant matures early, earlier than Zhengying No 1 by 4 to 5 days, it is especially suited for planting in highly fertile watered land of interplanting of wheat and cotton, double cropping of wheat and cotton, and double cropping of rice and wheat.

The appropriate sowing time in the Nanyang region is around 22 October. Ten to 12 jin of seeds should be sown in each mu, all cultivated land that produces a yield of less than 600 jin are unsuitable for planting this variety.

Nanyang 75-6:



Nanyang 75-6 is the sister line of Wanyuan 28-88. From 1977 to 1979, this variety was tested in the provincial regional experiments continuously for 2 years. In the southern regions, it produced 26.4 percent more over the control variety Zhengying No 1. In the northern regions it averaged 851.25 jin, less than the yields of Bai nong 3217 and Yan shi No 4, ranking third.

The variety has a weak wintering characteristic, the plant height is 87 to 97 centimeters, the tillering strength is strong, there are less tillers in spring, the percentage of spike formation is high, the stems are firm and tenacious, it is relatively resistant to lodging, maturation is intermediate, it yellows well. The awns are long, the husk is white, the grains are white, the thousand grain weight is 40 grams. It is immune to stripe rust disease, highly resistant to leaf rust disease, but slightly susceptible to white powdery mildew.

The suitable time for sowing in the Nanyang region is during the middle 10 days of October. Ten to 12 jin of seeds should be sown per mu and it is suitable for planting in medium and highly fertile and well irrigated land.

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NEW WHEAT VARIETY XINYANG 751 SUCCESSFULLY BRED

Chengzhou HENAN NONGLIN KEJI [HENAN AGRICULTURAL AND FORESTRY SCIENCE AND TECHNOLOGY] in Chinese No 9, 10 Sep 80 p 8

[Article by Wang Jinluan [3769 6855 7762] and Tao Lishi [7118 7787 0013] of the Xinyang Regional Agricultural Science Institute: "New Wheat Variety--Xinyang 751"]

[Text] Xinyang 751 is the hybrid of Ou rou as the female parent and A fu 429 as the male parent crossed in 1969 by the wheat group of the Xinyang Regional Agricultural Science Institute and successfully bred in 1975. Ou rou is a vernal, intermediate and early maturing variety (matures at the end of May). It is immune to stripe rust and stem rust diseases, it has medium resistance to leaf rust, and it is strongly tolerant to waterlogging. The awns are long, the husk is red, the grains are red, the groove of the seed is deep, the quality is relatively poor. A fu 429 is a weakly vernal, intermediate and early maturing variety, its bumper harvest characteristics are good, its resistance to rust disease is poor. After hybridization, a superior new variety: Xinyang 751 was bred after 6 years of cultivation and continuous selection.

Xinyang 751 is a medium yielding variety, the yield is between 300 and 600 jin. In 1975, the line was mixed and it was propagated in summer. In that year, it participated in the comparative experiments of varieties. The unit yield was 569 jin, producing an increase of 13.6 percent over the control variety A fu. In 1977-1978, it participated in the Xinyang area's regional experiment. Statistics of 13 test points showed the average unit yield was 625.5 jin, an increase of 4.5 percent over the control variety 7023. In the same year, it participated in the provincial regional experiment, and according to statistics compiled by eight localities of Xinyang, Nanyang and Zhumadian, the average unit yield was 710.7 jin, an increase of 2.1 percent over the contrast variety 7023. Statistics of 16 localities in the north and central parts of the province showed an average unit yield of 743.2 jin, an increase of 13.2 percent over the control variety Feng chan No 3. In 1978-1979, statistics of the 10 southern localities of the provincial regional experiments showed an average unit yield of 632.9 jin, an increase of 3.6 percent over the control variety 7023. Statistics of 25 localities in the northern and central regions showed an average unit yield of 677.9 jin, an increase of 7.3 percent over the control variety Feng chan No 3. After several years of experiments and demonstration at many localities, it has been welcomed by the masses, and at present, it has already been propagated at key commune brigades throughout the region.

The variety is weakly vernal, the young seedling is half erect, the tillering strength is strong, the percentage of spike formation is high (36 to 36.5 percent), the plant height is 100 to 110 centimeters, the base stem is relatively thin but the wall is thick and is tenacious, its resistance to lodging is better, the plant type is clustered, the size of the leaves is not too large and not too small, the angle of the leaves on the stems is small, the rate of utilization of solar energy is high, the spike is spindle shaped, the awns are long, the husk is red, the grains are white, the seed grains are full, the thousand grain weight is between 38 and 42 grams, it is highly resistant to mosaic viral disease transmitted by the soil, it is resistant to white powdery mildew and withering leaves disease and is slightly susceptible to rust disease. It is tolerant to cold and tolerant to dry hot winds, and its tolerance to waterlogging is good. During the latter period of growth, the functioning period of the upper leaves is long and they do not wilt early. At maturity, coloring is good, generally the plants mature at the end of May, and the variety is a superior intermediate and early maturing variety with a better adaptability.

In the Xinyang region in ordinary years, wheat is sown over an area of about 3.5 million mu. The area of wheat following rice constitutes about 50 to 60 percent. The major variety is the 7023. Its planting area constitutes about 75 percent of the total area of wheat sown. In recent years, mosaic disease of wheat transmitted by the soil has occurred profusely and 7023 has been seriously afflicted. The outstanding advantage of the Xinyang 751 is that it is highly resistant to mosaic viral disease transmitted by soil, and it is tolerant to waterlogging, therefore it can serve as the successor variety to 7023 in the double cropping rice and wheat fields of medium fertility in Huainan. It can be propagated and used over large areas.

Key points of cultivation: The variety is suitable for planting in land with slightly above medium fertility. The appropriate time of sowing is between 20 October and 25 October. The effective amount of seeds to be sown per mu is between 200,000 and 220,000 grains (16 to 17 jin). The maturation period of this variety is relatively short. After maturation it must be harvested in time to prevent rain from causing the seeds to germinate.

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HENAN

NITROGEN, PHOSPHATE CONTENT OF SEVERAL MAJOR FERTILIZERS

Zhengzhou HENAN NONGLIN KEJI [HENAN AGRICULTURAL AND FORESTRY SCIENCE AND TECHNOLOGY] in Chinese No 11, 10 Nov 80 p 22

[Article by Chen Wanhua [7115 1238 5478], Soil Fertility Institute, Provincial Academy of Agriculture and Forestry: "Nitrogen and Phosphate Content of Several Principal Peasant Manures"]

[Text] Peasant manures have broad applicability, are low in cost, easy to collect, are fairly complete in nutrients, and possess a quite large amount of organic matter. They perform well in improving the physical nature and fertility of soil.

Since 1964, we have conducted laboratory tests of total nitrogen and total phosphate content of 114 samples of 24 different peasant manures including compost, nightsoil, various pen manures, river muds, rubble from old walls, waste matter, and cake fertilizers from eastern Henan and Zhengzhou Prefecture. Results of these laboratory tests have been individually arranged below for reference.

Table 1. Nitrogen and Phosphate Content and Range of Several Principal Peasant Manures

Type	Name	Number of Samples	Total Nitrogen Percent		Total Phosphate (P_2O_5) percent	
			Range	Average	Range	Average
Compost	Grass fertilizer	19	0.1-0.2	0.15	0.14~0.29	0.20
	Mud fertilizer	3	0.059-0.098	0.066	0.16~0.20	0.17
	Compost	5	0.180-0.296	0.243	0.192~0.430	0.297
Animal Pen Manure	Ox pen manure	1	0.24	0.24	/	
	Pig pen manure	7	0.073~0.360	0.210	0.14~0.38	0.21
	Horse stable manure	3	0.34~0.98	0.61	0.59~0.69	0.67
	Mixed pen manures	30	0.106~0.829	0.286	0.144~0.653	0.288
Night-soil and Urine	Nightsoil, urine	2	0.42-0.74	0.58	/	0.34
	Nightsoil	6	0.31~0.90	0.62	0.36~0.77	0.58
	Dried Nightsoil*	2	0.31~0.38	0.34	0.32~0.40	0.36
	Nightsoil, urine manure *	18	0.105~0.380	0.229	0.119~0.340	0.22
Waste Matter	Castor oil residue	1	0.120	0.120	0.122	0.122
	Soybean oil residue	1	0.380	0.380	/	/
	Furfural residue	1	0.546	0.546	/	/
	Furfural residue	1	0.560	0.560	0.138	0.138
Cake Fertil-izers	Sesame cake	2	4.61~5.40	5.01	2.73~2.93	2.88
	Soybean cake	3	5.24~5.88	5.59	3.21~3.28	3.24
	Hulled cottonseed cake	1	/	5.15	2.48	2.48
	Finely ground sesame oil cake	1	/	3.88	/	/
	Castor cake	1	/	5.41	2.26	2.26
	Chinaberry cake	2	2.04~2.46	2.25	0.76~0.81	0.78
	Tea seed cake	1	1.84	1.89	0.65	0.65
River mud		9	0.090~0.242	0.139	0.192~0.350	0.259
Old wall rubble		4	0.122~0.232	0.188	0.197~0.206	0.201

*Note: Dried nightsoil was mixed with soil. Nightsoil and urine manure was mixed with soil, coal ashes, and rice straw

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HENAN

STATIC ELECTRICAL SPRAYER FOR FARM CHEMICALS DEVELOPED

Chengzhou HENAN NONGLIN KEJI [HENAN AGRICULTURAL AND FORESTRY SCIENCE AND TECHNOLOGY] in Chinese No 10, 10 Oct 80 p 19

[Article by Song Xinmin [1345 2450 3046] of the Information Institute of the Provincial Academy of Agricultural and Forestry Sciences: "New Plant Protection Technique--Static Electrical Sprayer for Farm Chemicals"]

[Text] In recent years, to solve the problem of pollution by farm chemicals, people have exerted much effort to reduce the use of farm chemicals or to find substitutes for farm chemicals. Although such work has achieved visible results, such as the research and implementation of biological and physical prevention, cultivation and propagation of varieties of agricultural crops resistant to diseases and insects, and the development and application of insect hormones, etc., but farm chemicals cannot yet be replaced en masse, especially in the prevention and control of sudden occurrences of devouring type insects. This has caused people to attempt to reduce pollution by farm chemicals by way of improving techniques for applying chemicals, such as the technique of ultra low volume sprayer used widely in production which is a relatively outstanding achievement in this regard. Although ultra low volume sprayer has many advantages, it has one shortcoming that is difficult to overcome. The mist is fine, and a significant amount of the farm chemical floats in the air and drifts far away, causing economic waste and environmental pollution.

In view of the above problem, some people abroad have utilized the principle of electricity: opposite charges attract and the same charges repel each other and the principle that a charged body induces an equal amount of opposite charge in electrical conductors nearby. A high voltage static electrical field is installed in the spout of an ultra low volume sprayer so that an opposite charge is induced in the object sprayed (such as agricultural crops, trees). At the same time, the mist carries the same charge as the spout and the droplets of the mist will not coagulate because of mutual repulsion and are attracted to the object being sprayed. The droplets of the mist of the chemical solution produced by the high pressure jet stream or the high speed rotary centrifugal atomizer plate fly toward the object being sprayed along the direction of the lines of electrical force, and fall on the surface and the hidden parts from different angles.

The static electrical sprayer possesses many advantages: (1) It reduces environmental pollution caused by free drifting of the farm chemical mist with the wind. (2) The chemical can be applied on both sides of the leaves of plants, thus increasing the percentage of adhesion of the farm chemical. (3) The droplets of the mist of the farm chemical mutually repel each other, thus helping the chemical solution to be evenly distributed. (4) It reduces the chance of operating personnel from being poisoned by the farm chemicals, thus improving the safety of the operation. (5) It conserves expenditures on farm chemicals.

Because of these advantages of the static electrical sprayer, it has caught the attention of foreign and domestic plant protection workers. The United States already holds patents on several types of static electrical spraying devices for farm chemicals. Results have been achieved in our nation in the development of such equipment. Prototypes of static electrical sprayer for farm work, gardening and forestry and health and disease prevention have been developed. For example, the hand-held static electrical sprayer developed in Shanghai has an input voltage of direct current of 12 volts, and an output voltage of 50,000 volts. The central diameter of the droplets of the mist is 53.2 μ. Experiments of spraying the Chinese littleleaf box tree of 1 meter in height show that the number of droplets of the mist on the top and bottom sides of the leaves is 2.8 times more than the number sprayed by the nonstatic electrical sprayer. The number of droplets of the mist settled on the back sides of the upper, middle and lower levels of leaves is 22.3 droplets per square centimeter, and the number of droplets falling onto the ground surface visibly reduced. The entire device is less than 7 kilograms in weight and it is convenient to carry about and use.

The static electrical sprayer for farm chemicals is a technique that has a bright future for development in plant protection.

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BRIEFS

1980 AGRICULTURAL TAX REDUCED--Because the [total] area of disaster caused by floods and waterlogging in Hubei last year was relatively large, the provincial people's government of Hubei has approved a reduction of agricultural tax. Such reductions for 1980 totaled 351.24 million jin (of unhulled rice), accounting for 17.1 percent of the total agricultural tax in the province. The approved reductions are now being implemented, level by level, in communes and brigades hit by disasters in accordance with the principle of "smaller reductions for areas with minor disasters, larger reductions for areas with major disasters, and total exemption for areas with extra-severe disasters." The provincial Finance Bureau has pointed out in related regulations that no units or individuals are allowed to hold back or improperly use the approved tax reductions. [Text] [Wuhan HUBEI RIBAO in Chinese 3 Jan 81 p 1]

GRAIN PROCUREMENT IN XIANNING--By 4 January, 285.38 million jin of grain were delivered to state granaries in Xianning Prefecture, overfulfilling the state grain taxation/purchase quota by 2 percent. [Wuhan HUBEI RIBAO in Chinese 7 Jan 81 p 1]

SNOW, RAIN REPORTED--It snowed in Hubei between early morning of 5 January and 8 a.m. 7 January. Medium-heavy to heavy snow was reported in Xianning Prefecture and in the southern parts of Huanggang, Jingzhou and Yichang prefectures. Light to medium-heavy rain or snow was reported in Enshi and Xiaogan prefectures and in the northern parts of Yichang, Jingzhou and Huanggang prefectures. Light rain or snow fell on Yunyang and Xiangyang prefeccures. Since last November, the majority of areas in Hubei had clear sky and no rain. Some of the summer-ripening crops suffered from the drought. Aphids brought about by relatively high temperatures in the winter did some damage to the wheat, rape and other overwintering crops. The recent rain and snow have eased the drought conditions, frozen the insects to death and benefited substantially the normal growth of overwintering crops. [Text] [Wuhan HUBEI RIBAO in Chinese 8 Jan 81 p 1]

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BRIEFS

JIUJIANG PREFECTURE COTTON HARVEST--This year, Jiujiang Prefecture in Jiangxi Province triumphed over the third flood disaster it has had since liberation and reaped a bumper cotton harvest. Jiujiang Prefecture is the principal cotton-growing region in Jiangxi Province. Shortly after the beginning of summer this year, the Changjiang basin had numerous torrential rains, and on 4 September the high-water mark on the Changjiang at Jiujiang exceeded the warning line by more than 2 meters. The floodwaters swept in suddenly and remained for a long time. But the commune members maintained all the dikes intact to triumph over the floodwaters, and output of ginned cotton throughout the prefecture increased by more than 20,000 dan over the bumper harvest last year. [Text] [Hong Kong ZHONGGUO XINWEN in Chinese 17 Nov 80 p 6] 9432

CSO: 4007

ZHANG GENSHENG COMMENTS FURTHER ON COMMERCIAL GRAIN BASES

Changchun NONGCUN KEXUE SHIYAN [RURAL SCIENTIFIC EXPERIMENTS] in Chinese No 11, 10 Nov 80 pp 2-4

[Article by Zhang Gensheng [1728 2704 3932], secretary Jilin Provincial CCP Committee: "A Glorious Great Trust; A Formidable Task; Discussion of How To Get on With the Building of Commodity Grain Bases in Jilin Province"]

[Text] Not long ago, the Central Committee convened a symposium on the building of commodity grain bases in the northeast, and on nationwide production of cotton and sugar. In order to transmit and carry out the spirit of this symposium, the provincial CCP committee recently convened an enlarged meeting of the Standing Committee to conduct full discussion and make concrete plans about the questions of principal actions and pertinent policies for achieving the objective of building Jilin Province's commodity grain and sugar bases. Now, in response to the request of this magazine, I will discuss the following points.

This Is an Important Plan That Makes the Most of Advantages, Stresses Positives and Avoids Negatives

In terms of long range planning for the development of China's agriculture, these two meetings convened by the Central Committee felt that doing a good job in building northeastern commodity grain bases and for building cotton and sugar bases are major actions to making the most of advantages, stressing positives and avoiding negatives. They also proceed from the realities of China's agricultural production and the needs of national economic development, and they ramify into strategic measures for development of the entire national economy. Consequently, we must grasp the essence of the spirit of these two meetings convened by the Central Committee, increase our understanding of the major significance of the building of commodity grain and sugar bases; take effective action, and get on with the construction of commodity grain and sugar bases in Jilin Province with all possible speed.

The building of cotton and sugar production bases was decided on the basis of a program put forward by the Central Committee providing for the rapid development of economic crops and no further importation of cotton and sugar within a period of from 3 to 5 years. Following the smashing of the "gang of four," a fine situation of stability and unity developed throughout the land; agricultural production developed very rapidly; and the peasants were able to rest and rehabilitate themselves. However, the development of cotton and sugar production was still somewhat slow. Mostly there was a sharp contradiction between grain and cotton, and grain and sugar. Consequently, the Central Committee decided to enlarge the area for the growing of cotton and sugar.

Expansion of the production of cotton and sugar in China had strings attached. Only by diverting several hundred million tons of grain to support cotton and sugar production could self-sufficiency in cotton and sugar be attained. This would not only conserve several hundred million dollars in foreign exchange, but it would also promote extensive development of China's cotton and sugar production. Economically this was very worthwhile. The money used to import one jin of cotton can buy more than 10 jin of grain, and within China two jin of grain is required to increase output of cotton by one jin. The money used to import one jin of sugar can buy 3 or 4 jin of grain, and if we use 1 jin of grain, we can increase sugar output by 1 jin.

Building of the commodity grain bases in the northeast is to select the most advantageous piece from among the nationwide commodity grain bases originally planned. This piece encompasses all of Heilongjiang and Jilin provinces and a portion of Liaoning for construction of the foremost commodity grain bases in the entire country. It has two objectives. First is to take fullest advantage of the large amount of land relative to population and the mechanization of agriculture in the northeast. This region amounts to one-sixth of the total area of the country and the population amounts to one-eleventh that of the country. The soil is fertile, suitable for mechanization, and there is a great amount of wasteland to be reclaimed. Building of commodity grain bases here requires small investment for quick results and a substantial commodity rate. Second is to gradually adjust the economic structure of agriculture. Emphasis on building of commodity bases concurrent with a general increase in grain output is of major significance in the readjustment of the layout of the entire national economy.

The building of commodity grain bases in the northeast will bring clear economic benefits. Grain and beans will predominate in the commodity grain bases of the northeast, while development of economic crops such as oil crops, sugar crops, tobacco, and flax can promote the overall development of agriculture, forestry, livestock raising, sideline occupations, and fishing in this region. Between 1981 and 1985, the accumulation of the 2 provinces of Heilongjiang and Jilin will make accumulated deliveries to the state of 20 billion jin of grain of which soybeans will amount to more than 3 billion jin. After 1985, the 2 provinces will deliver to the state between 6 and 7 billion jin of grain and beans annually, and will be able to provide oil, sugar, flax, and medicinal materials as well.

Two of the three major measures the Central Committee has adopted for doing a good job in the construction of commodity grain, cotton, and sugar bases in the northeast include our own Jilin Province. This is a great trust and a glorious yet formidable task that the Central Committee has bestowed upon all echelons of leadership and the people throughout Jilin Province. It is, at the same time, the most important issue relating to the long range planning for the entire economy of Jilin Province. The provincial CCP committee has discussed it repeatedly, concluding that the greatest advantage of the entire province still lies in agriculture. Jilin Province has 60 million mu of cultivated land, 120 million mu of forests, 40 million mu of prairies, grassy mountains and grassy slopes, and almost 10 million mu of water surfaces. In order for us to make a real contribution to the country, we must, first of all, give expression to agriculture. In deciding that Jilin Province should be a major commodity grain and sugar base, the Central Committee has pointed the direction for the future long range planning of the province, and this is of major significance in accelerating the mechanization of agriculture in Jilin Province, thereby making the rural villages become rich first. We resolutely support this and will earnestly put it into effect.

Active and Realizable Targets

What are the assumptions and requirements for making Jilin Province into a commodity grain and sugar base?

First is grain and bean production quotas. Total output will increase from the 18 billion jin of 1979 to 23 billion jin in 1985 for an average annual increase of 800 million jin, or incremental increases of 4.1 percent. Of the total, soybeans will increase from 1.3 billion jin to 1.8 billion jin.

In the quotas for delivery to the state of grain and beans, 200 million jin of the increase from 300 million jin in 1979 to 2 billion jin in 1985 will be soybeans. Of the accumulated deliveries to the state of 5 billion jin of grain between 1981 and 1985, 700 million jin will be soybeans.

Second is the sugarbeet farming area. This will develop from 1.2 million mu in 1980 to 2 million mu in 1985. From every 2 million tons of sugarbeets, 200,000 tons of sugar can be squeezed, and 140,000 tons of sugar delivered to the state. Between 1981 and 1985, the accumulated deliveries to the state of sugar will be 500,000 tons.

Third, income from commune members will increase from the 115 yuan of 1979 to 170 yuan in 1985, and the per capita amount of grain for consumption of commune members will be about 600 jin.

Are the forestated goals attainable? The answer is affirmative. First of all, the potential for grain production in Jilin Province is very great. In the 30 years since the founding of the People's Republic, grain output in Jilin Province has only doubled while the average national increase for the same period was 1.9 fold. This shows that we still have a potential to be tapped. Our currently planned speed of increas[illegible]till less than the current national level of increase. Were calculations [illegible] have been made on the basis of a 1.9 fold increase, by 1985 total output should be 26 billion jin. Our plans for only 23 billion jin leaves a margin. If 5 years from now we still have not attained current national levels, that will be unjustifiable. But now, as a result of the diligent implementation of the two Central Committee documents on the development of agriculture, the enthusiasm of the masses of cadres and commune members has been aroused, and this is of great importance. The Central Committee has further decided to make Jilin Province into national commodity grain and sugar bases, and has given great financial and material support to this end, which will hasten mechanization and the attainment of these goals. Additionally, only through strict control on population increase can we make a greater contribution to the country.

In the production of sugar, we have adopted correct policies, have properly readjusted base figures for requisition purchases, and have instituted increased prices for purchases in excess of quotas to make sugarbeet production develop rapidly. A general linking of grain and sugar is planned for next year, as a result of which not only will income from the growing of sugarbeets double that from the growing of wheat, but also for each mu of sugarbeets grown, an additional 100 jin of wheat may be obtained. To achieve this end, sugar mill construction must be accelerated and sugar squeezing capacity increased, for this is the only way to meet the needs of the development of sugarbeet production.

Once production has developed, the goals of increased per capita income and increased consumption grain for commune members can also be realized. The point is that our quotas and goals are active ones, which can be attained through effort. We must hold fast to this resolve.

Adoption of Workable Measures

(1) The first action that has to be taken to build the commodity grain and sugar bases of Jilin Province is the mechanization of agriculture. For us, making the most of advantages requires mechanization, and avoidance of disadvantages is also inseparable from mechanization. A good job of improvement of farming techniques requires mechanization above all.

Our objective is virtual provincewide mechanization of agriculture within a period of 5 years to attain the levels current in Yushu County. Every municipality, prefecture, zhou, and county should base their planning on a combination of this spirit and their own realities. There must be step by step progress, and under no conditions can there be a lot of big talk with no action. Quantities of farm machines are to be increased, and matched sets of equipment are to be made. Systems for management, training, and supply are to be set up. A good job is to be done in raising and using funds. There is to be a strengthening of leadership in agricultural mechanization.

(2) Expansion of wetland area to develop production of paddy rice. Henceforth, water conservancy projects will focus on the development of wetlands in an effort to increase them by 2 million mu to 6 million mu within 5 years. On the basis of an output of between 600 and 700 jin per mu, that would be about 4 billion jin, or an increased output of 2 billion jin for paddy rice alone. This is a fundamental way of solving Jilin Province's problems in flour and rice.

(3) A good job of building the forestry industry. The forestry industry can both produce large quantities of timber to supply the needs of national construction, and it is also important insurance for maintenance of ecological balance and being able to do a good job of agricultural production. In a certain sense, if forestry is done badly, agriculture cannot advance. The capital

construction of agriculture cannot stop only at water conservancy projects. In the western reaches of Jilin Province, in particular, unless the forestry industry is well run, no fundamental change in the picture of windblown sand and aridity is possible.

The key to the development of forestry lies in a readjustment of programs and policies. There are two prominent conflicts in forestry at the present time. One is an imbalance between cutting and planting in which the emphasis is on cutting while afforestation is slighted. The other is a conflict between state forest farms and those of communes and brigades in which concern for the welfare of the local masses is inadequate. Following careful investigation and study by the provincial CCP committee and State Council approval, four things are to be done. First is promotion throughout the province of the experiences of cooperation between forest operating bureaus and communes and brigades. Second is designation of barren hills, wastelands or sparse woodlands and second growth forests to be run and managed by communes and brigades. In general, from 5 to 15 percent of such lands should be so designated. Third is a policy of unswerving collective afforestation in the western parts of Jilin Province. Fourth, a change away from the burning of firewood in the eastern forest region must be instituted. Instead, twigs or coal should be turned. This will mean a saving of several hundred cubic meters of timber annually, the income from which can be used to subsidize expenses the masses incur in burning coal or twigs.

(4) Increased application of fertilizer to improve quality and increase quantity. Peasant families should improve the quality of their manure, chiefly by development of the livestock industry, which will increase the amount of livestock manure. They should also make full use of ashes from the burning of vegetation.

Active adoption of measures to increase chemical fertilizer production capacity. There is to be a doubling of present capacity by 1985 with applications of 60 jin per mu.

(5) Further implementation of a program of planting in accordance with location conditions. Changchun, Siping, and the eastern part of Baicheng Prefecture are the main grain and bean production areas, and these places are also suited to the development of sugar and oil crops. Jilin, Yanbian and Tonghua prefectures are the main centers for rice production, and for the active development of soybeans, potatoes, and valuable medical materials. Baicheng Prefecture is the principal region for oil crops and sugar crops, and it should turn out somewhat less grain to provide more edible oil and sugar products.

The entire province should give extreme emphasis to development of the livestock industry. Jilin Province has large tracts of meadowlands, grassy mountains, and grassy slopes, and its large quantities of corn, soybeans, and sunflower cake can be used to make mixed feeds. These are excellent conditions for the development of a livestock industry. In addition to the raising of hogs, vigorous efforts must be made to develop cows, sheep and milk cows, and milk goats, to provide more meat and dairy products. Additionally, food industries, wool, and leather industries can be developed.

Each local can adapt general methods to local situations to reclaim some small tracts of wasteland. But they must exercise a high degree of care not to cause desertification and soil erosion, and they may not destroy forests or grasslands. In the development of wastelands, between 15 and 20 percent of the area has to be retained for afforestation, road building, and the digging of watercourses.

(6) Further efforts in test site work on joint agricultural, industrial, and commercial enterprises. The provincial CCP committee has shown progress at the test sites in the three counties of Yushu, Nongan, and Huaide. They have now set up 35 different joint enterprise companies whose construction has been completed and which have gone into production. An additional 99 enterprises are being planned or being prepared for construction. Joint enterprises in these three counties take nine different forms: investments in shares for joint operation; breakdown of ownership lines to combine specialties within the same industry; dispersed production and joint marketing; signing of contracts with sales to the state of raw materials and repatriation of profits to the enterprise; processing of raw materials from elsewhere; joint county and provincial enterprises (two light industrial leather companies); grassroots supply and marketing communes in combination with agricultural, industrial, and commercial enterprises; county enterprises operated jointly with other provinces and municipalities; and the provincial light industry bureau is now preparing to set up a joint agricultural, industrial, and commercial company in the Jilin sugar industry that will include a combination of sugar mills and production teams.

Buttress Agricultural Research, Education and Promotion Work

Considering the character of RURAL SCIENTIFIC EXPERIMENTS, this present article should really be devoted to a discussion of the issue of the intensification of agricultural research, education and the promotion of new achievements in science and technology.

Agricultural research in Jilin Province rests on a good foundation, and it has had many accomplishments in the past. To meet the needs of the building of commodity grain and sugar bases, it should lay particular future stress on research into the breeding of superior varieties and growing techniques in an effort to make new breakthroughs within a short period of time. Research should be on high output, early ripening superior varieties of corn suited to various local climatic conditions, and on new varieties of soybeans and other crops of high photo efficiency, high resistance, high protein, and high output. Further research should be done on methods for growing rice seedlings in large covered areas resistant to cold. There should be further attention to surveys of natural agricultural resources, to agricultural zoning, and to soil surveys. Such work will begin this year and will be done from place to place over a period of time throughout the province to be completed by 1983.

Education in agricultural science and technology should be buttressed for a planned training of cadres for every echelon of leadership above the commune level. Agricultural, farm machinery, and forestry technicians should be trained to go from one commune to another to meet the special needs of individual communes and brigades. Some general senior middle schools will be converted to agricultural middle schools, and special courses in farming will be set up in rural senior middle schools. In order to meet the needs of the mechanization of agriculture, 100,000 tractor operators and technicians will have to be trained. Emphasis should go to operating farm machinery classes in 300 commune middle schools.

There will be an intensification of the spread of scientific and technical achievements in agriculture. In the period since the founding of the People's Republic, Jilin Province has had several hundred new research and innovative accomplishments on its agricultural front. If these can be spread and popularized, they will play an invaluable role in promoting the development of agriculture in Jilin Province. Every echelon of leadership must give attention to and take action on these tasks, and farm scientists at every echelon must make them a part of their apportioned tasks. In this regard, RURAL SCIENTIFIC EXPERIMENTS can be effective. Therefore, every level of the party organization in rural villages should esteem this magazine, use it as a tool for acquiring knowledge about agricultural science and technology and for doing a good job of agricultural production, making this educational magazine about rural science and technology play the role it should play in the building of commodity grain and sugar bases.

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CSO: 4007

JILIN

NEW RICE VARIETIES INTRODUCED

Changchun NONGCUN KEXUE SHIYAN [RURAL SCIENTIFIC EXPERIMENTS] in Chinese No 9, 10 Sep 80 p 22

[Article by the Propagation Department of the Provincial Seed Company: "New Rice Varieties Introduced"]

[Text] "Jinian No 2" Paddy Rice

"Jinian No 2" paddy rice was bred in 1972 by the paddy rice institute of the Provincial Academy of Agricultural Sciences from "513-5" of the complex xian rice heritage as the female parent and "Ji geng No 60" as the male parent.

The variety is an intermediate maturing paddy rice variety. Its growth period is 130-132 days and requires a cumulative temperature of 2750°C. The variety's seed grains are medium in length, oval in shape, the glume and the tip of the glume are yellow and awnless. The thousand grain weight is 24.1 grams, the coarse rice percentage is 83 percent. The rice grain is milky white in color and not transparent. The glutinosity is good, the quality is superior. The panicle is medium, the average number of grains per panicle is 73.2. The young seedling has strong growth, the seedlings are thick and strong, the leaves are dark in color. The plant height is 90 centimeters, the main stem has 14 leaves. The plant type is clustered, the leaves are erect and point upward. The stems are thin and firm and tenacious. The leaf sheath, leaf margin, pulvinus are all green. At maturity, the stem is yellow.

The variety has a strong tillering ability. Heading is uniform, and the percentage of panicle formation is high. It has a relatively strong resistance to blast of rice. Generally, each shang (15 mu) yields 6,750 jin. Under highly fertile conditions, it can reach 7,500 jin. In cultivating seedlings, thin plastic sheets should be used to keep the seedlings warm or the seedlings can be covered twice. Generally, seedlings kept warm can be sown during the middle 10 days of April, seedlings cultivated in wet conditions or kept warm by covering twice can be sown during the last 10 days of April. The seedling age generally should be 40 to 45 days. The seedlings should be transplanted between the end of May and the beginning of June. Because the stem is relatively short, the variety is more suited for dense planting than ordinary varieties. It is suitable for planting in medium and highly fertile conditions. On the bases of increasing the application of farm manure and potassium fertilizers, 40 to 50 jin of ammonium nitrate can be applied per mu, 50 percent of which should be applied before raking, 20 percent should be used as fertilizers for tillering, and 30 percent should be used as fertilizers for panicle growth. In irrigation, a method of combining shallow irrigation and intermittent irrigation should be used.

The variety is suitable for planting in our province's intermediate maturing region.

"Dongnong No 12" Paddy Rice

"Dongnong No 12" paddy rice is a variety introduced into this province in 1972 from Heilongjiang Province.

The variety's seed grains are oval, coarse and strong, the glume is pointed, the skin of the glume is dark yellow and awnless. The thousand grain weight is 26 grams, the quality of rice is medium. The panicle shape is relatively large, the panicles are dense, the panicle neck is short and thick, the average length of the panicle is 15 centimeters, each panicle has an average of 80 grains. The young seedling is strong, the plant height is 80 to 85 centimeters, the stalks are thick and strong, the plant type is clustered, the leaves are dark green. The tillering ability is medium, heading is uniform. The growth period is 125 days; the variety is an intermediate and early maturing variety. It is more resistant to blast of rice and is tolerant to fertilizers. Generally, each shang (15 mu) yields 4,500 to 5,500 jin. At commune brigades where the level of cultivation and management is high, it can reach 6,000 to 7,000 jin. The variety is suitable for planting in the mid-mountain regions in the mountain regions of Jilin. The use of thin plastic sheets to cultivate the seedlings is required. It should be cultivated early, transplanted early and the density should be 8 x 3 (cun). No more than 350 jin of ammonium nitrate should be applied per shang.

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CSO: 4007

BRIEFS

PADDY RICE--Yongji County, Jilin Province, as of 17 January had overfulfilled its paddy rice procurement plan by storing 98.47 million jin. [Changchun Jilin Provincial Service in Mandarin 1100 GMT 31 Jan 81]

CSO: 4007

BRIEFS

SHENYANG AGRICULTURE--Shenyang, 1 Feb (Xinhua)--The total grain and soybean output in the suburbs and two counties of Shenyang Municipality, Liaoning, in 1980 reached 3 billion jin. 1980 also saw the delivery of 1.33 billion jin of marketable grain to the state. The suburbs and the two counties also sold 438,000 hogs to the state in 1980. [Beijing Xinhua Domestic Service in Chinese 0720 GMT 1 Feb 81]

CSO: 4007

NEI MONGGOL

BRIEFS

SNOWSTORM DAMAGE--Xin Barag Right Banner, Nei Monggol Autonomous Region, was recently hit by a 4-day snowstorm. Most parts of the banner are now covered by snow ranging from 4 to 6 inches. The snowstorm seriously threatened livestock. Cattle in some communes have died in groups, and many horses and other livestock are missing. [Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 8 Jan 81]

GRAIN OUTPUT--Hangging Hou Banner's average annual increase in grain output has been 16.6 percent since the third plenary session of the CCP Central Committee. Grain output in 1980 was 215 million jin. By 14 January 1981, this banner had fulfilled the 1980 grain and oil-bearing seeds procurement plans, and accumulated public funds totalled 4.38 million yuan, an increase of 1.7 million yuan over the 1979 figure. The per capita income averaged 115 yuan, about 37 yuan more than that of 1979. Tongliao County overfulfilled the 1980 grain procurement plan by 30 million jin. The food grain for each commune member was generally 500 jin. Liaocheng County's grain output in 1980 was 138 million jin, 21 percent over the annual procurement plan. This county also overfulfilled the 1980 farm, animal husbandry and sideline produce plans, including oil-bearing seeds, hogs, fresh eggs and export vegetables and sheep. [SK230834 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 22 Jan 81]

MORE SNOW DAMAGE--Xin Barag Left and Right Banners in Hulun Buir League, Nei Monggol Autonomous Region, recently were stricken by a 4-day snowstorm, causing great suffering to the 540,000 animals raised by the eight communes of the two banners. The regional CCP Committee attached great importance to the calamity and gave 600,600 yuan in relief funds to the stricken area. Railway bureaus concerned were also mobilized to transport forage grass to support the relief operation. [Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 23 Jan 81]

BUMPER HONEY HARVEST--As of today this year, Nei Monggol already harvested more than 8.5 million jin of honey, thus surpassing last year's harvest for the same period. Over 84,000 boxes of bees are being kept in this autonomous region, and this figure is over 4 times greater than that of 1973. [Beijing RENMIN RIBAO in Chinese 20 Oct 80 p 2]

CSO: 4007

EFFORTS TO INCREASE PER CAPITA INCOME FOR PEASANTS NOTED

Jinan DAZHONG RIBAO in Chinese 16 Nov 80 p 1

[Article: "An Investigation of the Rural Economy in Yantai Prefecture"]

[Excerpt] Early in September, we arrived in Yantai Prefecture, Shandong Province, to begin a month-long investigation. Our general findings from this investigation indicate that the collective economy there is thriving on the simultaneous development of agriculture, forestry, animal husbandry, sideline production and fisheries, thus bringing about marked improvements in the living conditions of commune members. Before liberation, some countries in this prefecture were very poor, forcing many peasants to flee to the east part of Shandong to eke out a living. Since liberation, production has developed rapidly, thus bringing about improvements in the living conditions of peasants.

Some counties in this area were relatively poor before liberation, and many peasant households moved to Guandong to make a living. Rapid development of production and improvement of the peasants' living standards did not begin until after liberation. But under the influence of the "left" ideological line, sideline production was suppressed and the control of collective distribution was tightened for fear that an affluent peasant economy might lead to the revival of capitalism. This was why peasants were so poor there. This situation did not change until the downfall of the "gang of four," and until the party's policies for the countryside were implemented in the wake of the Third Plenary Session of the 11th Party Central Committee. In 1979, per capita income from collective distribution received by commune members in Yantai Prefecture was 156 yuan (which included income in kind), or 55 yuan more than in 1976, nearly doubling the province's average figure of 81.5 yuan or the nation's average figure of 83 yuan. Furthermore, in 11 production brigades in the prefecture, per capita income from distribution now exceeds 300 yuan; in some brigades, it is 430 yuan or more, and each commune member earned an average of 40 yuan from household sideline production and received an average of 513 jin of food grains through distribution. Bank savings deposits by commune members averaged 287 yuan per household. Many richer households have 1,000 to 10,000 yuan in bank deposits.

This increase in income has triggered a building boom. New homes have been built in almost every brigade visited by us. They were built under three different arrangements: (1) build your own homes to live in; (2) the production brigades build the homes through collective efforts, and whoever finances the construction of a home may live in it; (3) the brigades build the homes and rent them to commune members. These new homes are mostly two-story buildings, with two units on each floor--the first floor is occupied by old people and the second floor by young residents. Each new home is complete with a small courtyard, a latrine, a pigpen, a chicken or rabbit shed and space for planting flowers. From 1977 to 1979, three apartment buildings capable of housing a total of 30 families, with each family occupying 50 square meters or more of floor space, were built in Taojiakuang Brigade in Weihai Municipality. In general all the new housing projects built by commune members were constructed under a unified plan formulated by production brigades so that they can be built in a well-planned and orderly manner. Twenty percent of the commune members in Yeji Brigade of Huang County has built new homes. The brigade plans to convert all existing bungalows into new multi-story apartment buildings before the end of 1985 so that over 300 mu of land can be available for developing agricultural and sideline production.

The commune members are now eating better than before. Finer food grains and even meat have been made available to them. Today, beer has become a popular consumer item in rural areas. It is served not only during the New Year's Day celebrations but also at wedding parties and on other festive occasions, and at the gathering of relatives and friends. This is why breweries in Yantai Municipality can no longer meet the growing demands of the consumers, despite their continuing efforts to increase production. In the past, commune members were satisfied with sweet potato wine, now they want wine made of grain.

Marked improvements are also reflected in other living conditions, including clothing and other items of daily use. On our way we visited at random or through arrangements made by brigade cadres several tens of homes of commune members. Nearly every home we visited had new beddings, brand new wooden furniture, new wooden clocks, and dressing mirrors. Some even had sofas. Bicycles and wristwatches are now common things. At the fields where commune members were working, we saw rows of parked bicycles. According to the secretary of the party branch of Taojiakuang Brigade, wristwatches are being worn by over 90 percent of young commune members in his brigade when they go to work in the fields. He said that as the head of a family of four and earning a middle-low income, he has three bicycles and three wristwatches for himself and his family. Nearly every home there now has a radio set. Many commune-member families have television sets and washing machines. Commune members have also begun to pay attention to their daily wear. High-quality synthetic fabrics priced at 10 yuan or more per meter are now in great demand in rural areas, according to the party branch secretary of Dayu Brigade of Rongcheng County. Also in short supply there are other light industrial and textile goods, according to remarks by commune members.

But the development of the rural economy in Yantai Prefecture is still not well balanced. Some brigades remain poor and their masses still face economic difficulties. In 1979, there were 375 production teams (or 1.04 percent of the total) in which the per capita income from collective distribution was 80 yuan or less. Of these, 9 were under 50 yuan, and 5 were under 40 yuan. This year, everyone concerned in Yantai Prefecture has made great efforts to raise such income to more than 100 yuan for every commune member.

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CSO: 4007

POOR MANAGEMENT FOUND TO BE FACTOR IN SERIOUS WASTE

Jinan DAZHONG RIBAO in Chinese 15 Nov 80 p 1

[Article by DAZHONG RIBAO commentator: "Importance of Strengthening Financial Management"]

[Excerpt] At present, financial management is still a weak link in many production teams throughout Shandong Province. Only by effectively strengthening the financial management can we insure success in helping some localities increase their income, cut down losses and waste, improve their economic performance, promote agricultural production and develop the collective economy.

Our primary task is to develop the favorable conditions, look for new opportunities and develop production. Only in this way can we raise our income, savings and level of distribution. But an increase in the total output and gross income will not necessarily lead to an increase in the savings of collectives and in the income of commune members. Only by increasing production and income, tightening the control of expenditures, and lowering the production costs can we raise net profits. For this reason, we must pay attention to production costs and economy in organizing production, instead of to production alone. Some comrades have emphasized that "no one can shoot down any phoenix without gold bullets." But in our opinion, it is wrong to ignore science and economic results when production is organized and carried out. According to reports from various localities, among the items that reflected the biggest losses and waste were farm machinery, insecticides, and especially chemical fertilizer. Findings from an investigation by departments concerned of eight selected units to study production costs indicate that the costs of materials for wheat production averaged 0.092 yuan per jin, with the highest cost at 0.128 yuan per jin. Of that expenditure, chemical fertilizer accounted for 57.7 percent for some units and 70 percent or more for others. Some units have applied 320 jin of commercial chemical fertilizer to each mu of land. In other words, the production of 1 jin and 7 liang of wheat uses 1 jin of chemical fertilizer. This fact shows that even with "gold bullets" one still cannot shoot down "any phoenix," if one does not pay attention to the scientific method and economic results.

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CSO: 4007

SHANDONG

ENCOURAGEMENT GIVEN PEASANTS TO RAISE RABBITS

Jinan DAZHONG RIBAO in Chinese 10 Nov 80 p 1

[News report: "Advantage of Policy Relaxation"]

[Text] By the end of September 1980, Shandong Province's Yinan County, a long-haired rabbit production base in the province, had in stock 810,000 long-haired rabbits, or 190,000 more than in the corresponding period of 1979; the amount of rabbit hair purchased by the state exceeded 135,000 jin, or 49.2 percent more than in the corresponding period of 1979.

Since the beginning of this year, the Yinan County party and revolutionary committees have taken the following measures to promote the production of long-haired rabbits. First, households raising 10 fully grown rabbits or more have been granted 0.01 mu of feedstuff land for each rabbit, and more land can be made available to such households in sparsely populated areas. Second, each time when commune members turn over or sell to the state 1 yuan worth of rabbit hair, the production teams would reward them by selling to them 1 jin of grain, the state would also reward them by selling to them 1 jin of standard chemical fertilizer, and the rabbit feces turned over to the teams would be priced according to quality and recorded for [yearend] cash distribution in the same year. Third, a long-haired rabbit breeding farm funded by the state has been established in each commune. Fourth, households in communes have been encouraged to breed and raise rabbits as a special enterprise. All households interested in raising rabbits as a special enterprise are permitted to assign one person, who will be excused from taking part in collective productive labor to tend rabbits, and to retain 70 percent of their rabbit-raising income, with the remainder going to the collectives to purchase work points. Fifth, the civil affairs departments have helped poor households in society build rabbit sheds and have assisted them in the purchase of young rabbits, instead of giving them relief funds. Apart from these measures, bank credit departments have issued loans to commune members and collectives for raising rabbits.

The implementation of such measures has stimulated commune members to show greater interest in raising rabbits. Thus far, some 170 households in Yinan County have proven successful in raising 50 rabbits or more per household, whose income from the collection of rabbit feces and rabbit hair exceeded 500 yuan. Fifteen other households have been able to raise 100 rabbits or more each and earn an extra income of 1,000 yuan or more each. Over 100 households have also claimed success in raising rabbits as a special enterprise.

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CSO: 4007

BRIEFS

SOIL SURVEY--A recent survey on 31.63 million mu, or 13.7 percent, of the land in Shandong revealed that the soil of 80 percent of the farmland in the province: contains less than 1 percent of organic matter; is very short of nitrogen, phosphate and potassium, especially phosphate; and is less fertile than in the early post-liberation period. These acute shortages have adversely affected agricultural production. For a number of years, many areas in the province tended to stress chemical fertilizers while paying little attention to organic fertilizer, and used much more nitrogen fertilizer than phosphorous and potassium fertilizer. In 1979, the amount of chemical fertilizers applied to farmland averaged more than 110 jin per mu--5 times as much as in 1970, while the application of organic fertilizer was only increased slightly or even decreased in some farms. Investigations also revealed that the soil of over 80 percent of the province's farmland contains less than 0.001 percent of fast-acting phosphate. Increasing substantially the organic content of soil is, therefore, an urgent task in developing farm production in the province. [Jinan DAZHONG RIBAO in Chinese 4 Nov 80 p 1]

COTTON PRODUCTION--Jinan, 13 Jan (Xinhua)--The total cotton output of Shandong Province reached 10.7 million dan in 1980, showing an increase of 7.37 million dan over 1979 and 1.3 million dan over the 3 years of 1977, 1978 and 1979 combined. As of 5 January, the province had procured 10.21 million dan of marketable cotton. [Beijing Xinhua Domestic Service in Chinese 0141 GMT 13 Jan 81]

CSO: 4007

FACTORS AFFECTING WHEAT PRODUCTION IN SOUTHERN REGIONS OUTLINED

Taiyuan SHANXI NONGYE KEXUE [SHANXI AGRICULTURAL SCIENCES] in Chinese No 1, 20 Jan 80 p 17

[Article by Guo Mingyi [6753 2494 5030] and Zhang Zongxin [1728 1350 0207] of the Provincial Agricultural Bureau: "Some Views on Wheat Production in the Southern Regions of Our Province"]

[Text] Southern Shanxi produces wheat, and including the two regions of Yuncheng and Linfen, they constitute a concentrated region of the province that produces wheat and an important base for providing commercial wheat. The sowing area of wheat constitutes over half the total area of the province, therefore, hastening increases in wheat yield of the southern regions of Shanxi has an important significance.

The characteristics of natural agricultural resources of the southern regions of Shanxi are suitable for developing wheat production. But the wheat yield has been low and unstable for many years. The reasons are the weather conditions of the occurrence of drought 9 out of 10 years, and the irrational planting system. Some years ago, some localities went against the patterns of nature and economic patterns and attempted to plant sorghum en masse in the south. Some people pursued food grain production and blindly expanded the area of multiple cropping, thus destroying the rational distribution of agricultural crops, discarded the traditional system of rotation cropping and nurturing the land, causing the yield of wheat to drop. Under this situation, "using autumn to supplement summer" was overly emphasized, causing confused crop openings, fertility dropped, and a vicious cycle was formed year after year. As a result, "reverse rotation in autumn occurred and two crops produced less than one crop." One brigade in Yuncheng County had 90 mu of good paddy wheat fields, and the fields had been planted continuously for over 20 years, the yield reduced year by year and the per mu yield dropped from over 500 jin a few years ago to over 300 jin last year.

What is the main factor that affects the wheat yield in the southern regions? We believe the main reason is infertility of the land, insufficiency of fertilizers, and as long as the soil's fertility can be improved, the threat of drought can be reduced to a definite degree. The annual amount of rainfall in ordinary years in the southern regions is 500 millimeters. As long as rational planting measures are taken, the demand for water by the wheat plants to produce a 300 jin per mu yield can be basically satisfied. The outstanding conflict is that the level of soil fertility is very low. According to the experiments of Dongguanzhuang, in fertile dryland with a strong ability to preserve water, producing 1 jin of wheat requires 750 jin of water, but in infertile dryland that has poor water retention, over 3,400 jin of water is required. This fully shows fertility is the key factor that affects the wheat yield.

The basic experience of many high yielding brigades in the southern regions is massive application of organic fertilizers. Comparing organic fertilizers to water, it is easier to obtain organic fertilizers, the investment is small, the results are fast, and applying organic fertilizers is the most economical and the most efficient measure to retain water to resist drought and for producing high and stable yields. It is suggested that each locality should grasp organic fertilizers at the same time as it grasps water, each locality should change the past way of paying attention to water and slighting fertilizers and paying attention to chemical fertilizers and slighting organic fertilizers. Each locality should include grasping organic fertilizers as an item of basic construction in agriculture. If the organic content of the soil can be increased to above 1 percent within 3 to 5 years, a new breakthrough will be possible in the wheat yield in the southern regions.

9296
CSO: 4007

VARIETIES OF SPRING SOWN CROPS INTRODUCED

Taiyuan SHANXI NONGYE KEXUE [SHANXI AGRICULTURAL SCIENCES] in Chinese No 2, 20 Feb 80 p 30

[Article by Bai Zhigang [4101 1807 0474] of the Provincial Seed Company: "Introduction to Varieties of Spring Sown Crops (I)"]

[Text] Millet

I. Spring Sown Intermediate and Early Maturing Region

The main varieties in the plains and the river regions are Jin gu No 4, Jin gu No 9, Zhang chun yi, coupled with the varieties Jin gu No 5, and the hopeful new variety is 7141-281. In the hilly region, the main varieties are Fan shi huang, Zhang chun yi, coupled with the variety Dong fang liang. In the high and cold region, the main variety is Qi yue huang, coupled with San bian hua, and Yu xian da huang gu.

II. Spring Sown Intermediate and Late Maturing Region

The main varieties in the plains and river regions are Jin gu No 2, Jin gu No 8, Jin gu No 10 coupled with the varieties Jin gu No 1, Jin gu No 11, and the hopeful variety is Jin zhong 202. In the hilly region the main varieties are Jin gu No 2, Jin gu No 3 coupled with Gu shang gu, Bai shi liu, Chen nong No 3, and the hopeful variety is Lu gu No 2.

Corn

I. Spring Sown Early Maturing Region

The main varieties are Jin dan No 13, Jin dan No 12, coupled with the varieties Jin dan No 3, Jin dan No 4, and the hopeful variety is the Jin yang zao dan No 2.

II. Spring Sown Intermediate and Late Maturing Region

The main varieties are Zhong dan No 2, Dan yu No 6, Bai dan No 4, coupled with the varieties Da dan No 2, Jin zhong 301, Jin dan No 8, and the hopeful variety is Tai dan No 25.

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BRIEFS

PEASANTS' PURCHASING POWER--Chengdu, 17 Jan (Xinhua)--Purchasing power of each individual peasant in Sichuan Province reached an average of 67.8 yuan last year. There are 80 million peasants in Sichuan. The peasants' purchasing power in 1958 averaged 31.23 yuan per person, and it increased to 39 yuan in 1976, or a raise of only 7.77 yuan. In the past 2 years, 1979 and 1980, Sichuan peasants' purchasing power has increased from 46.6 yuan to 67.8 yuan. In 1980 the state paid some 5.6 billion yuan to the peasants for procurement of farm and sideline products. [OW210535 Beijing Xinhua Domestic Service in Chinese 0228 GMT 17 Jan 81]

COCOON OUTPUTS--Sichuan Province has acted in terms of the overall situation and actively transported silkworm cocoons in support of the rather more developed silk industries in Jiangsu and Zhejiang provinces and in Shanghai Municipality. As of the present time, the province has shipped out more than 200,000 dan of cocoons and more than 3,000 tons of silkworm silk-spinning raw materials to overfulfill quotas alloted in the state plan. During the past 3 years, silkworm production has developed rapidly, with output of cocoons rising greatly. In 1978, output of silkworm cocoons and quantities purchased by the state for the entire province exceeded 1 million dan. Output leaped from second to first place in the country, and in 1979 another bumper crop of silkworm cocoons was harvested when output reached 1.48 million dan, an increase of more than 400,000 dan over the year before. Despite impairment this year from low temperatures and much rain, the cocoon harvest was still a good one. Upholding the spirit of regarding the entire country as a chessboard, Sichuan Province has annually shipped a large quantity of cocoons and silk semimanufactures to provide Jiangsu and Zhejiang provinces and Shanghai Municipality with reel silk for weaving silk fabrics. They felt that in the coastal provinces and municipalities where the silk industry is fairly concentrated, with a large processing capacity, advanced craftsmanship, and superior techniques, shipping more cocoons to these areas could provide greater economic benefits for the greater benefit of the country. As compared with last year, this year's shipments of cocoons from Sichuan Province were not only greater in quantity but better in quality, too. [Text] [Beijing RENMIN RIBAO in Chinese 8 Dec 80 p 2] 9432

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BAD WEATHER AFFECTS ANIMAL HUSBANDRY

OW280635 Beijing XINHUA Domestic Service in Chinese 0054 GMT 27 Jan 81

[Summary] Urumqi, 27 Jan (XINHUA)--"The herdsmen of various nationalities in Xinjiang's pastoral areas are busy transporting fodder, painstakingly looking after livestock and working hard to resist disasters in order to have a high production of animal husbandry."

Due to the implementation of the system of responsibility in production, Xinjiang scored good achievements in animal husbandry over the past 2 years. "In June 1980, Xinjiang's total number of livestock increased by 1.5 million head over the corresponding period in 1979. Its meat supply to the state increased by 2,100 dun and its output of other animal byproducts also increased over that of previous years."

"However, since the second half of 1980, the weather has been abnormal in Xinjiang and caused great difficulties to its animal husbandry production. In the face of the natural disaster, the leadership at various levels and herdsmen in pastoral areas promptly set about preparing materials to prevent and resist calamities. They arranged the grass-cutting task with production teams and individuals and rewarded them according to the amount of grass cut. Although the growth of grass in all pastures in 1980 was poorer than in former years, the amount of hay cut by most areas was not less than 1979. Some areas even cut more grass than 1979."

"According to the experience of success in the past 2 years, this year all localities in Xinjiang continued to attach importance to selling--at reasonable prices--some of the thin and weak livestock that could hardly survive the winter and spring to commune members for raising. In this way hundreds of thousands of head of livestock would be saved. In addition, the autonomous region raised the prices of lamb meat to stimulate animal husbandry communes to properly increase the slaughter amount of wethers and lambs in order to relieve the pressure of the pastures. According to statistics, as of the beginning of the winter in 1980, Xinjiang's 1980 lamb slaughter amount increased to 500,000 head, doubling the figure of 250,000 head in 1979."

Since 1980, the concerned departments in Xinjiang have improved the method of issuing funds for resisting disasters and protecting livestock. They previously issued funds after disasters had occurred. This year, instead they have issued funds in advance.

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BRIEFS

LIVESTOCK INDUSTRY OUTPUT--In the Xinjiang-Uygur Autonomous Region, diverse economic components of state farms, collectives, and individuals coexist for the common development of pastoral and agricultural areas. This year, the total rate of growth in the livestock industry, the meat production rate, and the commodity rate were all the highest they have been for the past several years. This year, everywhere throughout Xinjiang emphasis has been given both to the development of the livestock industry in the grasslands and to an increase in the raising of livestock in places near large areas of farmland. This is a striking characteristic in the development of the livestock industry. The agricultural area in Xinjiang is vast, so not only are there large amounts of stalks and stems from crops, agricultural byproducts, and twigs and leaves from trees, all of which are usable as forage, but inside the oases there are scattered grassy areas and countless millions of mu of diversiform-leaved poplars [Poplar diversifolia] and suosuo [2747 2747] forestlands, and commune members from agricultural areas make use of these conditions for the growing of cattle and sheep. In the pastoral regions, the economic components of state farms, collectives, and individuals coexist for the development of the livestock industry. Production teams sell from their collective herds weak animals that might not survive the winter until spring. They sell them at a fixed price to herdsmen who have few or no livestock to raise as their own private livestock. Some communes and brigades hand over pregnant ewes, which are difficult to keep, to commune members for raising, their young are returned to the commune following birth. This has resulted in a heartening situation in which a decline has occurred in the death rate of fully grown livestock, a rise has taken place in the survival rate of newborn animals, and the overall rate of increase has risen. [Text] [Hong Kong ZHONGGUO XINWEN in Chinese 17 Nov 80 p 6] 9432

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BRIEFS

CCP COMMITTEE MEETING--Addressing a recent work conference of the Zhejiang Provincial Party Committee, Li Fengping, secretary of the Provincial Party Committee and governor of Zhejiang, urged the leaders of all prefectures, municipalities and counties to concentrate their efforts in leading agricultural production and strengthen and improve the system of responsibility in collective agricultural production. He pointed out that, except in the particularly impoverished production units, the system of fixing production quotas for individual households is undesirable, not to mention the idea that land be divided up for individual farming. He added that grain acreage in Zhejiang should not be reduced; diversified economy should be developed on the basis that grain output has been ensured; commune- and brigade-run enterprises must be consolidated; and inefficiently run enterprises must be resolutely closed down, suspended, merged or transformed. [Huangzhou Zhejiang Provincial Service in Mandarin 0400 GMT 31 Jan 81]

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AUTHOR: LING Qihong [5677 0796 7703]
CAI Jianzhong [5591 1696 0022]
SU Zufang [5685 4371 5364]

ORG: All of Jiangsu Agricultural College

TITLE: "The Practical Value of Using the 'Leaf Index' and 'Leaf Remainder' in Determining the Stages of Panicle-Differentiation in Rice Plants"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 4, Nov 80 pp 1-11

TEXT OF ENGLISH ABSTRACT: The relationships between the stages of panicle-differentiation and "leaf index" as well as "leaf remainder" in rice plants were studied in 17 varieties of O. sativa L. subsp. hsien Ting (Indica Kate) and 8 varieties of O. sativa L. subsp. keng Ting (Sinica Chang or Japonica Kate) at Yangzhou in China and Bordo Agricultural Research Center of Guinea in 1972-1979. The observation of 10,000 rice plants showed that panicle-differentiation in rice plants began when the fourth leaf from the uppermost (flag leaf) was sprouting out, regardless of variety, time and place of cultivation and planting season. There was a synchronous relation between the different stages of the panicle-differentiation and the sprouting of the last three and one-half leaves from the uppermost. The "leaf remainder" as a unified criterion used in determining the stages of panicle-differentiation in rice plants is rather superior to that of "leaf index" as it is suited to all the varieties despite the number of their leaves, and is also

[Continuation of ZHONGGUO NONGYE KEXUE No 4, Nov 80 pp 1-11]

simple and correct in use. The problem of the dividing of the stages of the entire process of panicle-differentiation was also discussed according to its effects on the formation of the panicle characteristic and the morphological characteristics of the plant.

AUTHOR: DING Xiquan [0002 1585 3123]
ZHAO Huachun [6392 0553 2504]
LU Qinhua [6424 3830 5478]
et al.

ORG: All of Jilin Academy of Agricultural Sciences

TITLE: "Studies on the Sprinkling Techniques for High Yield of Maize"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 4, Nov 80 pp 12-18

TEXT OF ENGLISH ABSTRACT: We studied the sprinkling irrigation techniques to get high yields for maize in 1974-1979. The results of these experiments showed that:
(1) Under sprinkling irrigation conditions, the formal standards of high yield of maize include 260-300 cm plant height, 0.8-0.85 m^2 leaf area per plant and 3.5-4 leaf area index.
(2) A sprinkling irrigation system for high yield of maize consists of 30 cm depth of 100 percent soil moisture content layer, 50 cm depth of moist layer, 30 m.m. water quantity for each sprinkling, once every 7-10 days.
(3) Under the condition of sprinkling irrigation, maize plants require 500-550 m.m. of water during the entire growing period. The strength of daily water consumption varies in a two peak curve.
(4) The yield of maize correlates significantly highly with the leaf area index, leaf area of plant and the area of the ear leaf.

[Continuation of ZHONGGUO NONGYE KEXUE No 4, Nov 80 pp 12-18]

(5) The increasing law of dry-matter and grain's weight appears like an "S" curve. The equation of increase and increasing velocity shows as follows:

$$G_t = \frac{G_0}{1 + e^{a-bt}}$$

and $$V = \frac{dG_t}{dt} = \frac{G_0 \cdot be^{a-bt}}{(1 + e^{a-bt})^2}$$

AUTHOR: XU Dewei [6079 1795 1218]
SHEN Zhende [3088 6966 1795]
XU Madi [1776 7456 1229]

ORG: All of the Shanghai Institute of Plant Physiology, Chinese Academy of Sciences

TITLE: "Effect of CMH on Growth and Boll Setting of Cotton Plants"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 4, Nov 80 pp 19-25

TEXT OF ENGLISH ABSTRACT: CMH (2-chloroethyl-N-dimethyl-hydarazonium chloride) is known as an effective growth inhibitor. During 1978-1979 we completed a series of experiments on the effect of CMH on growth and boll settings of cotton plants. We found that the weight of the boll increased, root activity accelerated, early decrepitude of growth was prevented, and the growth of the apical and lateral buds was inhibited conspicuously by spraying with 0.05-0.1 percent water solution of CMH during the period of early flowering of the cotton plant.

AUTHOR: ZHENG Huiyu [6774 1920 3768]
CHEN Huadong [7115 0553 2639]

ORG: Both of the Soybean Institute, Jilin Academy of Agricultural Sciences

TITLE: "A Preliminary Study on the Resources of Wild Soybeans in Jilin Province"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 4, Nov 80 pp 26-32

TEXT OF ENGLISH ABSTRACT: This article introduces the distribution and types of wild soybeans in Jilin Province. A new species is also reported.

The preliminary results of a study on plant characteristics and ecotypes of wild soybeans in Jilin Province were obtained by evaluation trials in the laboratory and the field. It was found that most of these valuable resources are high in protein and have some valuable characteristics, including high yield and pest resistance.

AUTHOR: WANG Dianying [3769 3013 3467]
CHEN Yuxiang [7115 3768 7449]

ORG: Both of the Millet Research Institute, Shanxi Academy of Agricultural Sciences

TITLE: "The Main Characteristics Variation of the Millet Varieties Grown in Both Northern and Southern Areas and Its Use in Practice"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 4, Nov 80 pp 33-38

TEXT OF ENGLISH ABSTRACT: In the south (Ledong County of Guangdong Province) and the north (Changzhi on the southern border of the loess plateau) of China, we experimentally grew the millet farmyard varieties produced originally in southeast Shanxi, and observed their characteristics variation.

The southern experimental plots are lower than the northern ones by about 18° latitude and 900 meters above sea level. In the south, the entire growing period, heading stage, plant height, number of seeds per spike, weight of seeds per spike and 1000 grain weight were significantly correlated with the ones in the north. Hence we considered that it is feasible to do our seed selection in both northern and southern areas in order to speed our breeding work.

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Through this experiment we also selected a few kinds of varieties with the fewest changes of their characteristics when the light and temperature were greatly changed. We have used such varieties as cross parents in crop breeding for the purpose of gaining hybrid progenies with a wide adaptability.

AUTHOR: LIU Zhongzhu [0491 0022 2691]
CHEN Binghuan [7115 3521 3562]
WEI Wenxiong [7614 2429 7160]
YOU Chongbiao [1429 1504 2626]
LI Jingwei [6849 2529 0251]
SONG Wei [1345 2607]

ORG: LIU, CHEN and WEI all of the Soil and Fertilizer Research Institute, Fujian Academy of Agricultural Sciences; YOU, LI and SONG all of the Institute for Application of Atomic Energy, Chinese Academy of Agricultural Sciences

TITLE: "Preliminary Exploration of the Process of Nitrogen Excretion by Azolla"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 4, Nov 80 pp 39-43

TEXT OF ENGLISH ABSTRACT: During growth Azolla can excrete fixed nitrogen into the surrounding culture solution. This method of nitrogen excretion is the continuous process of physiology. Nitrogen fixed on one day can be continually excreted in the days to come in addition to being excreted on that first day.

Increases in nitrogen for the culture solution that has grown Azolla mostly comes from the excretion of the Azolla mass in the physiological process. The rotten

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falling roots only make up a small quantity of nitrogen and that from the direct extraction of nitrogen of falling roots is even smaller. Azolla in a sterilized solution can still excrete nitrogen.

Rice seedlings can absorb and utilize the nitrogen that Azolla has excreted into the solution.

AUTHOR: None

ORG: Chinese National Coordinating Research Team on Rice Blast

TITLE: "Evaluation of Rice Varietal Resistance to Blast (*Pyricularia oryzae* Cav)"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 4, Nov 80 pp 44-52

TEXT OF ENGLISH ABSTRACT: The evaluation and screening of the varieties resistant to rice blast disease with 2187 accessions were conducted at different locations throughout the country from 1976 to 1979. Of these, a few varieties were found to have high resistance to blast, better than "Tetep" and similar to "Toride No 1," which can be recommended as the blast-resistant sources for breeding in China or used as the grown variety.

In accordance with the reaction of resistance to rice blast, the studies have preliminarily exposed the variation in resistance of the domestic and foreign varieties and the pathogenic difference of the blast fungus in different rice-growing regions. The virulence of isolates in double rice-growing areas in south China seems stronger than that in the single rice regions in the north. The present report gives a preliminary suggestion for the selection of resistant parents in breeding programs on the basis of breeding efficiency for resistance to rice blast.

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In addition, discussions on the evaluation of varietal resistance, the utilization of resistant sources and the development of improved varieties with disease resistance are presented here to aid in rice breeding for blast resistance.

AUTHOR: HE Jiabi [0149 1367 3125]

ORG: Institute of Plant Protection, Henan Academy of Agricultural Sciences

TITLE: "Inheritance of Wheat Rust Resistance and It's Breeding"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 4, Nov 80 pp 53-64

TEXT OF ENGLISH ABSTRACT: The present paper mainly reports the study on genetic resistance in three species of wheat rust. As for stem rust (*Puccinia graminis tritici*), 32 resistance genes were identified in the United States and their locations on chromosomes were almost completely determined. More recently, research on horizontal resistance of wheat stem rust has also made some progress. As for yellow rust (*P. striiformis*), most of the information on resistance inheritance comes from Europe and India. It was reported that more than 10 resistance genes were identified, and among them some multialleles were revealed. The accumulative effects of genes might be useful in rust resistance breeding programs. Several Chinese institute have done some research work on the inheritance of yellow rust resistance of more than 20 wheat genotypes and have achieved some results. From the study of leaf rust (*P. recondita tritici*), 23 resistance genes were determined in the American International Rust Nursery with their chromosomal locations. Results showed that the resistance is mostly controlled by a single gene, but sometimes also occurs in multiallele and transgressive

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segregation. Information from West Germany and Canada shows leaf rust resistance being controlled by two pairs of genes. This paper also gives a detailed description of the method of investigation and analysis of wheat rust resistance, and some views on the improvement of the breeding program for wheat rust resistance.

AUTHOR: WU Shipan [0702 0013 4149]
GUO Anping [6753 1344 1627]

ORG: Both of the Institute of Vegetable Crops, Gansu Academy of Agricultural Sciences

TITLE: "A Primary Study on Control of Tomato Mosaic Disease by Vaccination of Attenuated Virus"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 4, Nov 80 pp 70-74

TEXT OF ENGLISH ABSTRACT: Vaccination of tomato plants with an attenuated strain of TMV was tested as a tomato mosaic disease preventative. The attenuated strain was selected by: 1. keeping the infected plants for 2-3 weeks at 35°C, 2. treating the infected juices with nitrous acids. The parent virus was a tomato strain of TMV commonly found in greenhouse tomato crops in Lanzhou.

The cross protection showed 15 days after vaccination. The disease index of the vaccinated tomato plants was greatly decreased.

Some problems in the practical control of this disease with the attenuated virus were discussed.

AUTHOR: JI Hao [6060 3185]

ORG: Institute of Animal Husbandry and Veterinary Science, Jiangsu Academy of Agricultural Sciences, Nanjing

TITLE: "An Observation on the Asexual Reproduction of *Toxoplasma gondii* in Tissue Culture"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 4, Nov 80 pp 75-78

TEXT OF ENGLISH ABSTRACT: 1. *Toxoplasma gondii* is an intercellular parasite. It was found that this parasite can penetrate the cells of various hosts in tissue culture and be able to live in the cytoplasm for reproduction by fission, forming five different kinds of terminal colonies, such as ring, rosette, polyring, banding and honeycomb-like arrangements; the first two types of these five arrangements had been mentioned by other researchers in the literature while the remaining three types were hitherto first found by our observation and also named by us.
2. The tachyzaites of *T. gondii* were also observed to be able to penetrate the nucleus of the host cell for reproduction by fissions (lengthwise as well as crosswise) in it. This phenomenon was once demonstrated and discussed in 1970 by J. S. Remington, et al. in a short article entitled "Toxoplasma in Nucleus," but since they did not see the procedure of nuclear penetration of the parasite,

[Continuation of ZHONGGUO NONGYE KEXUE No 4, Nov 80 pp 75-78]

no clear conclusion was made. From our observation we actually saw the procedure of nuclear penetration of the parasite and found out that *T. gondii* was able to invade the nucleus of the host cell, living in it and undergoing reproduction. Hence we obtained some information on the asexual reproduction of the life cycle of this particular parasite.

3. From the above data, it might be concluded that this particular parasite (*T. gondii*) is an intercellular parasite, not only able to live in the cytoplasm, but also in the nucleus of host cells.

AUTHOR: LIU Wangyi [0491 2598 1138]
ZHU Laifa [4555 0171 4099]
WENG Zhifa [5040 1807 4099]
SHEN Hongmin [3088 3163 3046]

ORG: LIU and ZHU both of the Shanghai Institute of Biochemistry, Chinese Academy of Sciences; WENG and SHEN both of the Animal Husbandry and Veterinary Research Institute, Shanghai Academy of Agricultural Sciences

TITLE: "A Comparative Study of Inosinic Acid Contents in Chicken Muscle"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 4, Nov 80 pp 79-83

TEXT OF ENGLISH ABSTRACT: By the descending paper chromatographic method, a comparative study was made to determine the inosinic acid (IMP) and inosine contents in skeletal muscle of three strains of chickens (New Putong, Putong and White Rock). The results are as follows:

1. After slaughter, the IMP content in muscle gradually decreased with an increase in inosine content at room temperature.
2. The IMP content was higher in breast muscle than in leg muscle.
3. Among the three strains of chickens examined, there were no significant differences in IMP content in muscle.

AUTHOR: DENG Liyou [6772 4539 0645]

ORG: Grasslands Institute, Chinese Academy of Agricultural Sciences

TITLE: "A Discussion on the Basic Characteristics of Grassland Resources in Xizang"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 4, Nov 80 pp 84-88

TEXT OF ENGLISH ABSTRACT: This paper analyzes the basic characteristics of grassland resources in Xizang, and also notes its advantages and disadvantages for animal husbandry production. The author gives some suggestions for resource utilization and reconstruction.

1. The areas of grassland are very vast with multiple types of land. The feeding grass per mu is poor, but its nutrient compounds are generally rich.
2. Due to the cold weather for a long period of time in winter-spring and the short period of warm weather in summer-autumn, the best use of the natural resources and the steady development of animal products are restricted. According to the present production conditions, it is suggested that the Xizang Autonomous Region should better control the development of the number of livestock and develop seasonal animal husbandry in order to overcome the loss caused by the unfavorable seasons, and still attempt to increase animal products. It is estimated that animal products may be increased by more than 60 percent.

[Continuation of ZHONGGUO NONGYE KEXUE No 4, Nov 80 pp 84-88]

3. The horizontal distribution of total grass resources is very unbalanced. The capacity of animal feeding and potential value of grassland are quite different in the various regions. The best conditions for this development are in the Ali and Changdu regions.
4. The field for cutting grass is insufficient in Xizang. In those regions where water and heat conditions are satisfactory, artificial grassland should be developed rapidly.

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